87-18

Restoration Advisory Board
Meeting Agenda

January 21, 1996

7:00	**Welcome** LTC Stephen W. Brooks Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
7:15	**Ecological Risk Assessment** Ms. Julia Schulten, PhD Ecological Risk Assessor, Parsons Engineering-Science, Inc.
7:45	**Break**
8:00	**Ash Landfill Feasibility Study Alternatives** Mr. Michael Duchesneau, P.E. Project Manager, Parsons Engineering Science, Inc.
8:30	**Open Discussion**
9:00	**Adjourn**

Presentation to the Restoration Advisory Board

January 21,1997

PARSONS ENGINEERING SCIENCE

Presentation for Tonight

Site Status at the Ash Landfill

Michael Duchesneau, P.E.

Ecological Risk Assessment

Julia Schulten, Ph. D.

Site Status at the Ash Landfill

Michael Duchesneau, P.E.
Project Manager

PARSONS ENGINEERING SCIENCE

Topics for Presentation

- Remedial Investigation (RI) Summary
- Feasibility Study (FS) Summary
- Remedial Alternatives

Site Status at the Ash Landfill

Remedial Investigation (RI) Summary

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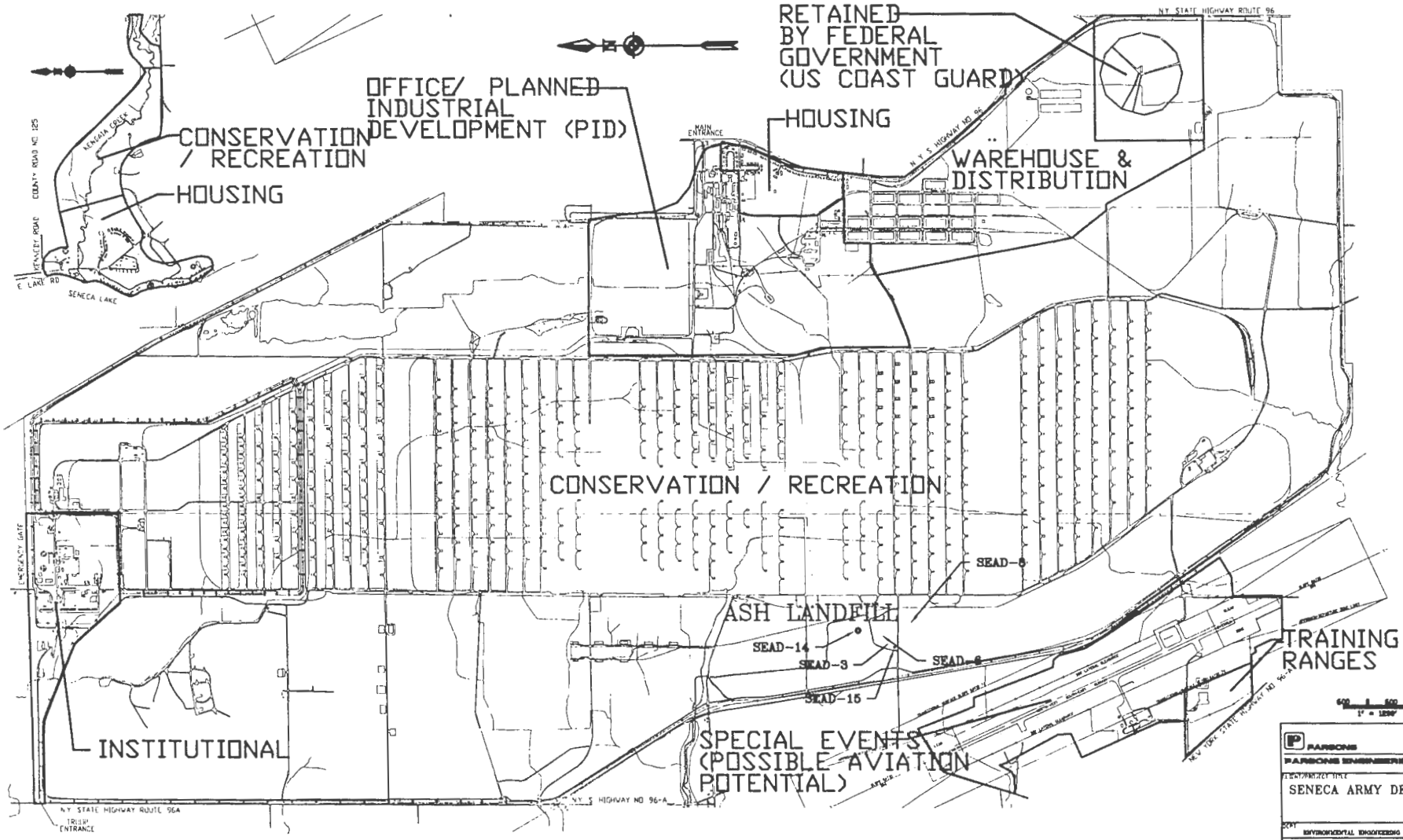

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SENECA ARMY DEPOT ACTIVITY

ENVIRONMENTAL ENGINEERING

Eng No. 739688-01000

ASH LANDFILL
SITE LOCATION AND
LAND USE

SCALE 1" = 1800'

DATE JANUARY 1997

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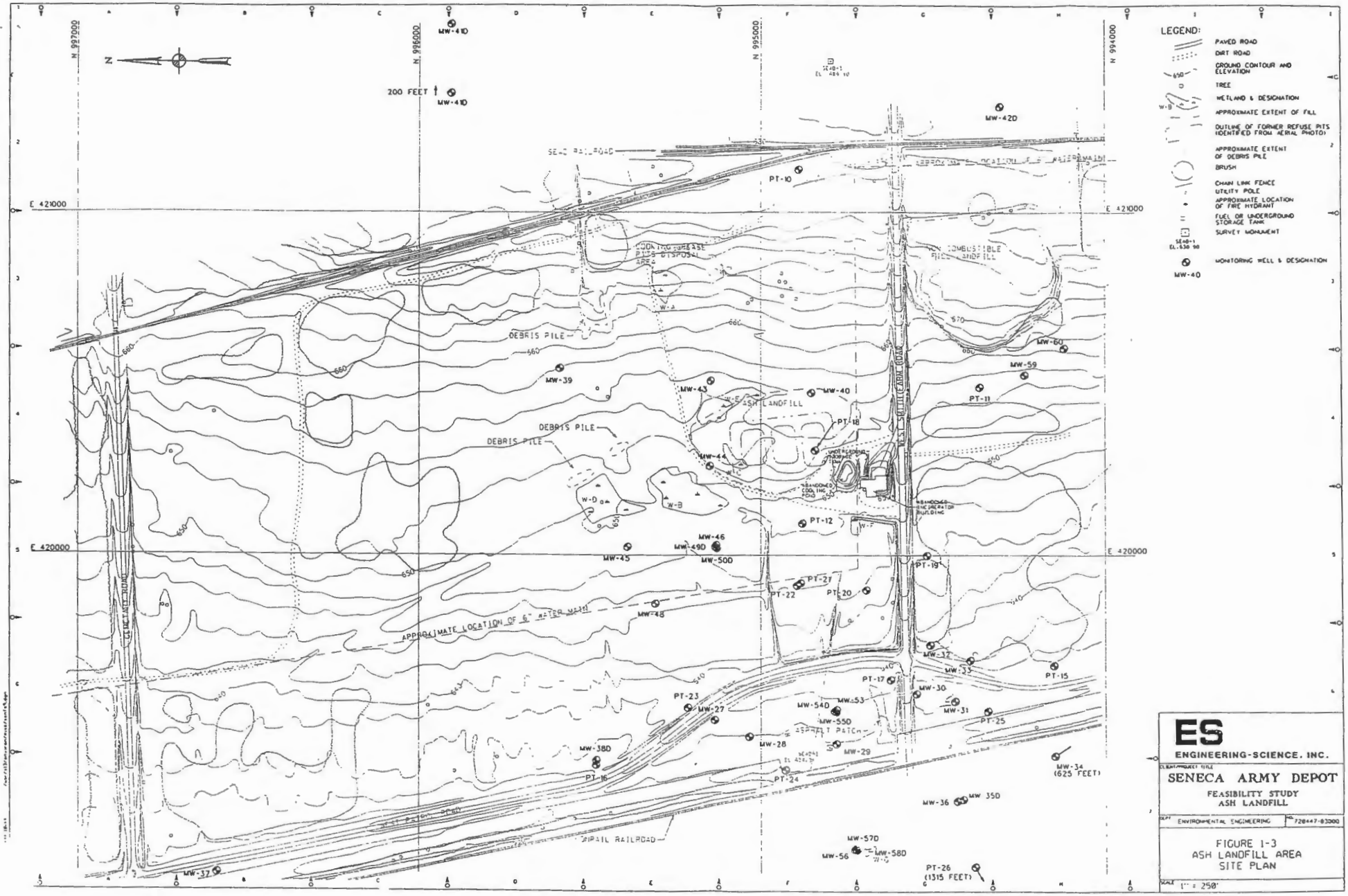

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ENGINEERING-SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT
FEASIBILITY STUDY
ASH LANDFILL

DEPT. ENVIRONMENTAL ENGINEERING — No. 720447-03000

FIGURE 1-3
ASH LANDFILL AREA
SITE PLAN

SCALE 1" = 250'

History and Description of the SWMU's at the Ash Landfill

- *Trash Burned in (2) Refuse Burning Pits (SEAD-14) from 1941 to 1974*
- *Trash Incinerator (SEAD-15) Operated from 1974 to 1979*
  - *Destroyed by Fire on May 8, 1979*
- *Ash Temporarily Stored in Cooling Pits (SEAD-3)*
  - *Disposed of in the Ash Landfill (SEAD-6)*
- *Non-Combustible Fill Placed in the Non-Combustible Fill Landfill (SEAD-8)*
- *All SWMU's were Combined and Investigatd as one Operable unit*

Remedial Investigation Field Tasks

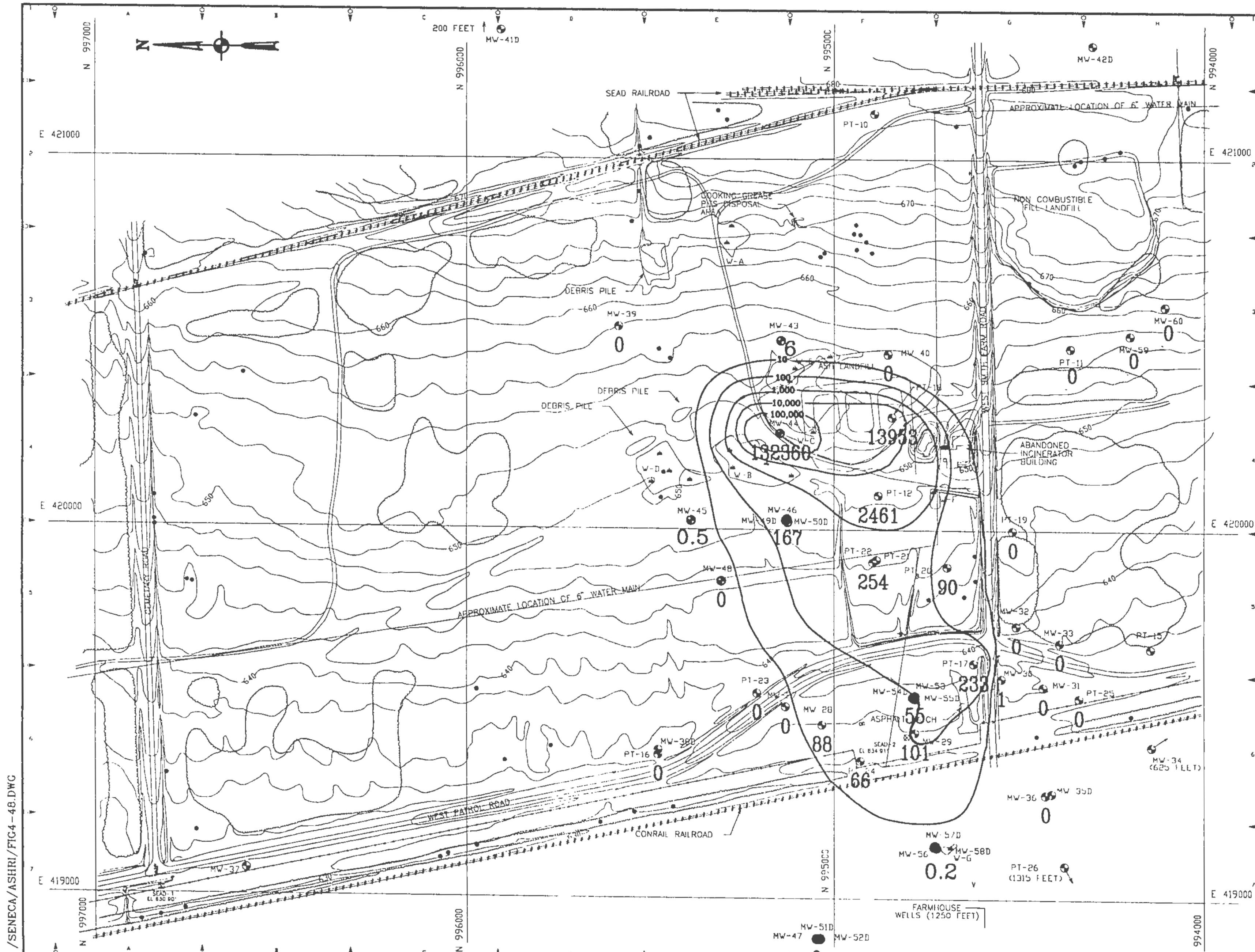
- Soil Gas Sampling
- Geophysical Investigation
- Fracture Trace Analysis
- Soil Sampling
- Groundwater Monitoring
- Surface Water and Sediment Samples
- Ecological Survey

Components Sampled for at the Ash Landfill

- Volatile Organic Compounds (VOC)
- Semivolatile Organic Compounds
- Pesticides and PCBs
- Metals
- Herbicides

Milestones of the RI/FS Process

- *Initiated Fieldwork December, 1991*
- *Completed Fieldwork June, 1994*
- *Remedial Investigation (RI) Report*
  - *Submitted Final on October 3, 1994*
- *Fesibility Study (FS) Report*
  - *Submitted Final on December 16, 1996*
- *Groundwater Modeling Report*
  - *Submitted Final on July 9, 1996*



LEGEND:

- PAVED ROAD
- DIRT ROAD
- 650 GROUND CONTOUR AND ELEVATION
- TREE
- W-B WETLAND & DESIGNATION
- APPROXIMATE EXTENT OF FILL
- OUTLINE OF FORMER TRASH PITS (IDENTIFIED FROM AERIAL PHOTO)
- APPROXIMATE EXTENT OF DEBRIS PILE
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SEAD-1 EL 630.90' SURVEY MONUMENT
- PT-22 / MW-37 MONITORING WELL AND DESIGNATION
- —10,000— GROUNDWATER ISOCONTOUR (ug/L)

REV	DATE	DESCRIPTION
B		PREDRAFT PHASE II RI/FS
A		ISSUED WITH PRELIMINARY SITE CHARACTERIZATION REPORT

DRAWN BY: C.A. KAELIN — CHECKED BY: M.E. BAKER
DESIGN SUPV: C.A. KAELIN — REV. CHGR: M.N. DUCHESNEAU
CHIEF DISC. ENGR: M.E. BAKER — MGR. OF ENGR: J.P. CHAPLICK
PROJECT MANAGER: M.N. DUCHESNEAU
MGR. OF PROJECTS: J.P. CHAPLICK
IN CHARGE: W.D. PATTERSON

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SENECA ARMY DEPOT
REMEDIAL INVESTIGATION
FEASIBILITY STUDY
ASH LANDFILL

DEPT: ENVIRONMENTAL ENGINEERING — 720447-03000

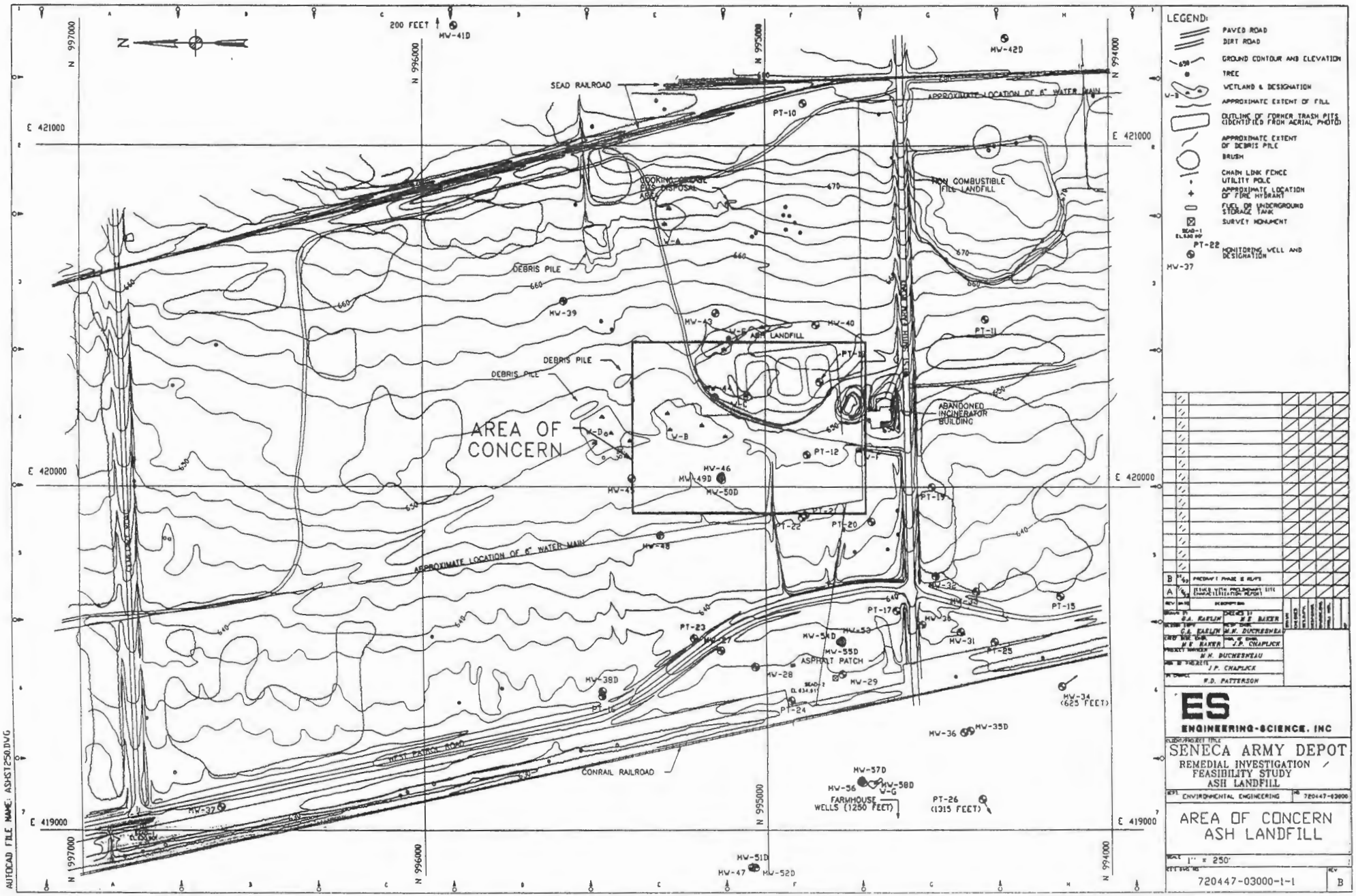
FIGURE 4-48
TOTAL CHLORINATED VOLATILE ORGANIC PLUME (ug/L)

SCALE: 1" = 250'

720447-03000-1-1 — REV B

Interim Remedial Measures (IRM)

- *Pro-Active Removal Action*
- *Implemented after RI Dec. 1994, Prior to the FS, Completed June, 1995*
- *35,000 Tons of Soil Treated using Low Temperature Thermal Desorption (LTTD)*


200 FEET
N
LEGEND:
PAVED ROAD
DIRT ROAD
GROUND CONTOUR AND ELEVATION
TREE
WETLAND & DESIGNATION
APPROXIMATE EXTENT OF FILL
OUTLINE OF FORMER TRASH PITS IDENTIFIED FROM AERIAL PHOTO
APPROXIMATE EXTENT OF DEBRIS PILE
BRUSH
CHAIN LINK FENCE
UTILITY POLE
APPROXIMATE LOCATION OF FIRE HYDRANT
FUEL OR UNDERGROUND STORAGE TANK
SURVEY MONUMENT
MONITORING WELL AND DESIGNATION
AREA OF CONCERN
SEAD RAILROAD
APPROXIMATE LOCATION OF 8" WATER MAIN
DEBRIS PILE
ASH LANDFILL
NON COMBUSTIBLE FILL LANDFILL
ABANDONED INCINERATOR BUILDING
ASPHALT PATCH
WEST PATROL ROAD
CONRAIL RAILROAD
FARMHOUSE WELLS (1250 FEET)
(1315 FEET)
(625 FEET)
MW-41D
MW-42D
MW-39
MW-40
MW-43
MW-46
MW-49D
MW-50D
MW-48
MW-54D
MW-55D
MW-53
MW-38D
MW-37
MW-36
MW-35D
MW-57D
MW-56
MW-58D
MW-51D
MW-47
MW-52D
PT-10
PT-11
PT-12
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ENGINEERING-SCIENCE, INC
SENECA ARMY DEPOT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
ASH LANDFILL
ENVIRONMENTAL ENGINEERING
AREA OF CONCERN
ASH LANDFILL
1" = 250'
720447-03000-1-1
B
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Site Status at the Ash Landfill

Feasibility Study (FS) Summary

PARSONS ENGINEERING SCIENCE

Initial Steps of the Feasibility Study (FS)

- *Establish Remedial Action Objectives (RAOs)*
- *Determine Media Requiring Remedial Action*
  - *Source Control (SC) Alternatives for Soil*
  - *Migration Control (MC) Alternatives for Groundwater*

Remaining Steps of the Feasiblity Study (FS)

- *Screen Remedial Technologies*
- *Assemble Remaining Technologies into Remedial Alternatives*
- *Screen Remedial Alternatives*
- *Establish Treatability Requirements*
- *Perform Detailed Analysis of Remaining Remedial Alternatives*

Threshold Screening Criteria

- *Protectiveness of Human Health and the Environment*
- *Effectiveness*
- *Cost*
- *State and Community Acceptance*

Site Status at the Ash Landfill

Summary of Remedial Alternatives

Ash Landfill Source Control Remedial Alternatives

- ***SC-1:*** *No Action*
- ***SC-2:*** *Excavation of Both Landfills/Disposal Off-site in Licenced Landfill*
- ***SC-3:*** *Excavation/Consolidation to the NCFL/Cap NCFL*
- ***SC-4:*** *Excavation/Wash/Backfill coarse fraction/Solidify fine fraction*
- ***SC-5:*** *Excavation of Debris Piles at the Ash Landfill/Disposal in an off-site Licenced landfill/Soil cap for Ash Landfill and NCFL*

Ash Landfill Migration Control Remedial Alternatives

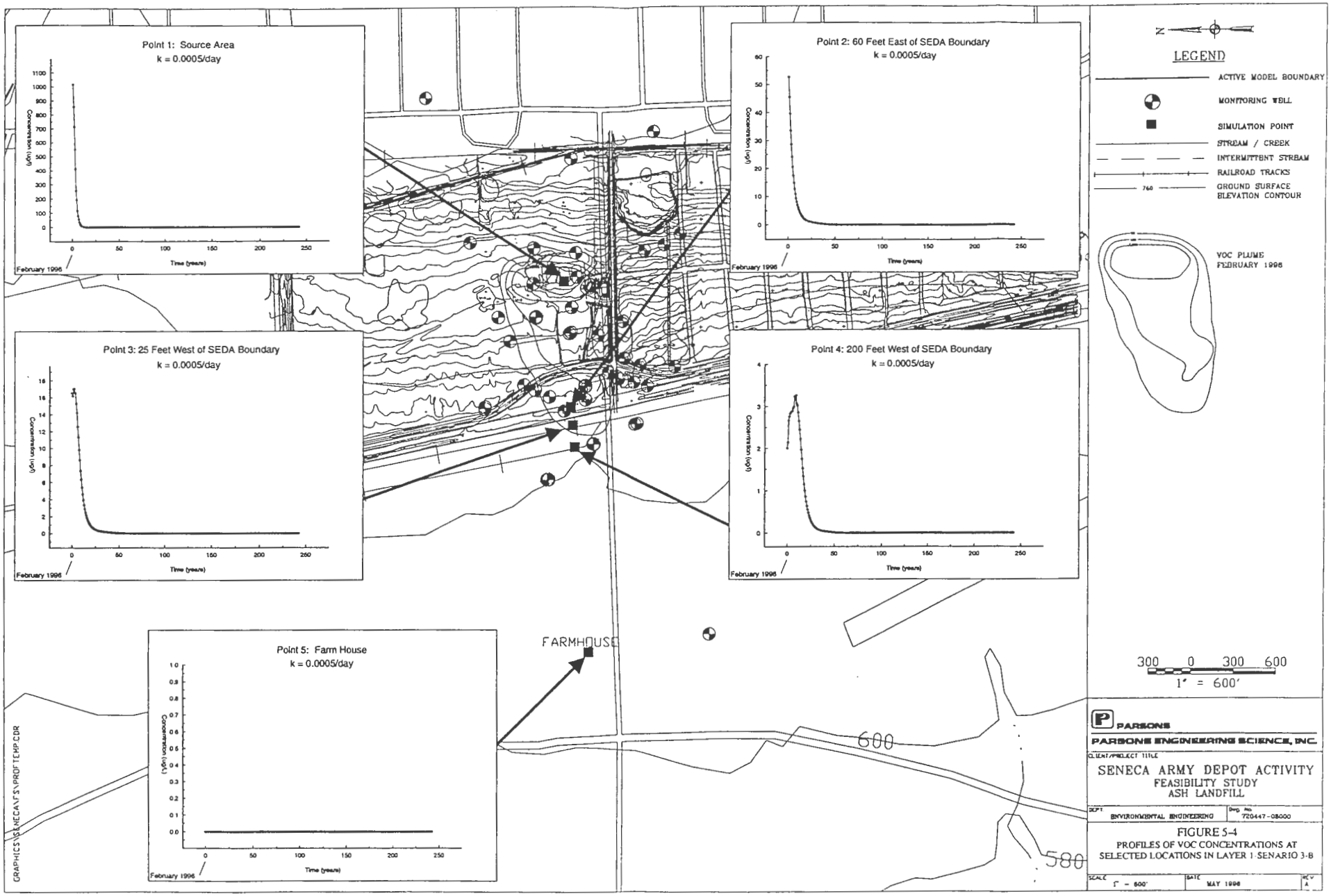
- ***MC-1:*** *No Action*
- ***MC-2:*** *Natural Attenuation and Institutional Controls*
- ***MC-3:*** *Air Sparging of Plume In-situ Treatment*
- ***MC-3a:*** *Funnel-and-Gate / In-situ Treatment (Iron Filings)*
- ***MC-4:*** *Interceptor Trenches/Filtration/LiquidPhase Carbon/Surface Water Discharge*
- ***MC-5:*** *InterceptorTrenches/Filtration/Air Stripping/Surface Water Discharge*
- ***MC-6:*** *InterceptorTrenches/Filtration/UV Oxidation/Discharge to Surface Water*
- ***MC-7:*** *Interceptor Trenches/Filtration/Two-Stage Biological Treatment/Surface Water Discharge*

MC-1, No-Action Alternative

- *Nothing is Implemented*
- *No Monitoring is Involved*
- *Costs are Zero*
- *Retained as a Baseline Comparison to Other Alternatives*

MC-2, Natural Attentuation and Institutional Controls

- *Natrual Mechanisms, i.e.Biological, Sorption, are Effective in Achieving Reductions*
- *Acceptable Risk is Achieved by Pathway Elimination*
- *The Intended Future Land Use is Restricted to a Wildlife Management Area*
- *Alternative Water Supply will Eliminate Potential Future Off-Site Exposure to Groundwater*
- *Monitoring Program Will Provide Warning of Potential Future Threats*
- *Cost Effective*



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CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
FEASIBILITY STUDY
ASH LANDFILL

DEPT: ENVIRONMENTAL ENGINEERING

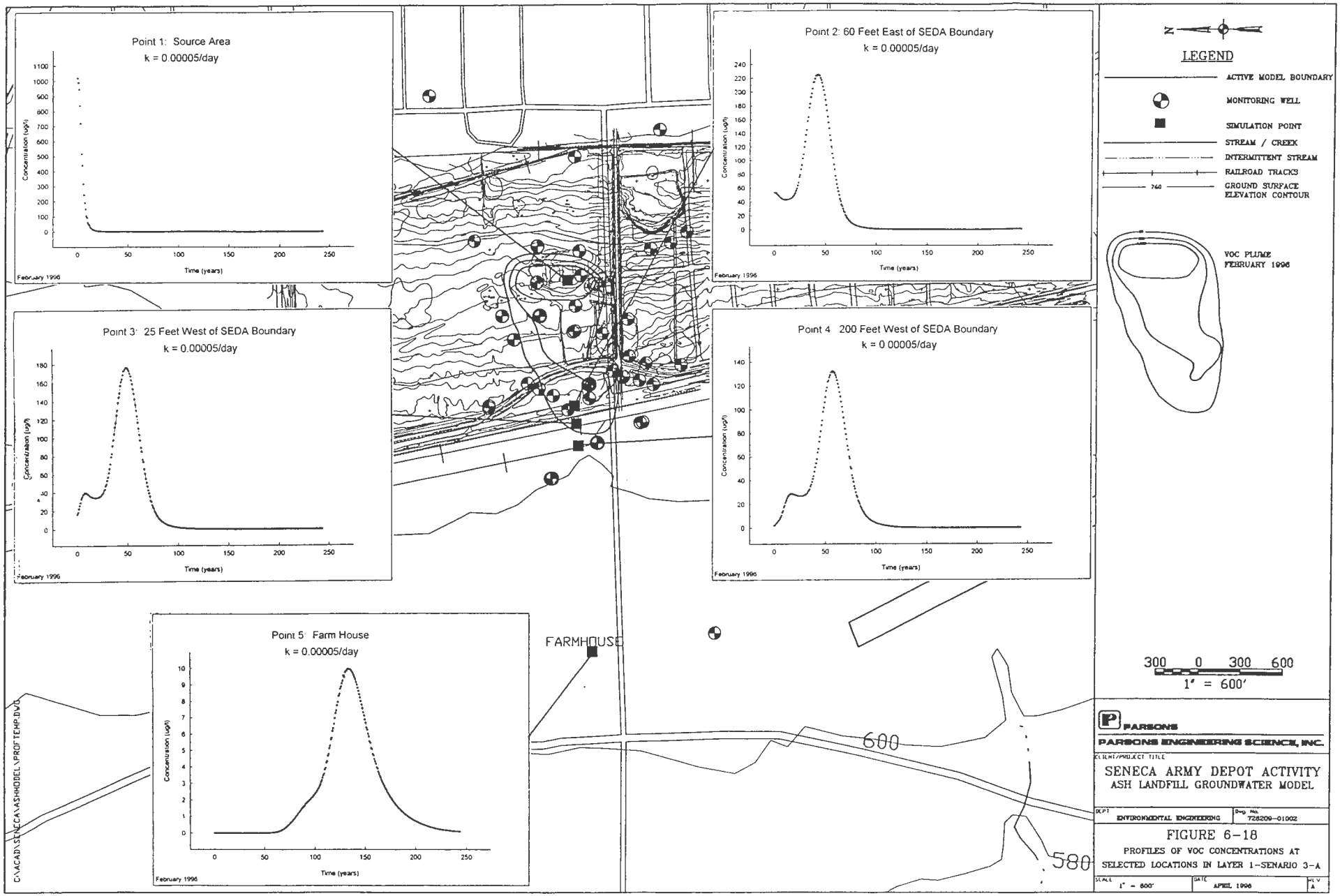
Dwg. No: 720447-08000

FIGURE 5-4
PROFILES OF VOC CONCENTRATIONS AT SELECTED LOCATIONS IN LAYER 1-SENARIO 3-B

SCALE: 1" = 600'

DATE: MAY 1996

REV: A



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CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL GROUNDWATER MODEL

DEPT: ENVIRONMENTAL ENGINEERING | Dwg. No. 728209-01002

FIGURE 6-18

PROFILES OF VOC CONCENTRATIONS AT SELECTED LOCATIONS IN LAYER 1-SENARIO 3-A

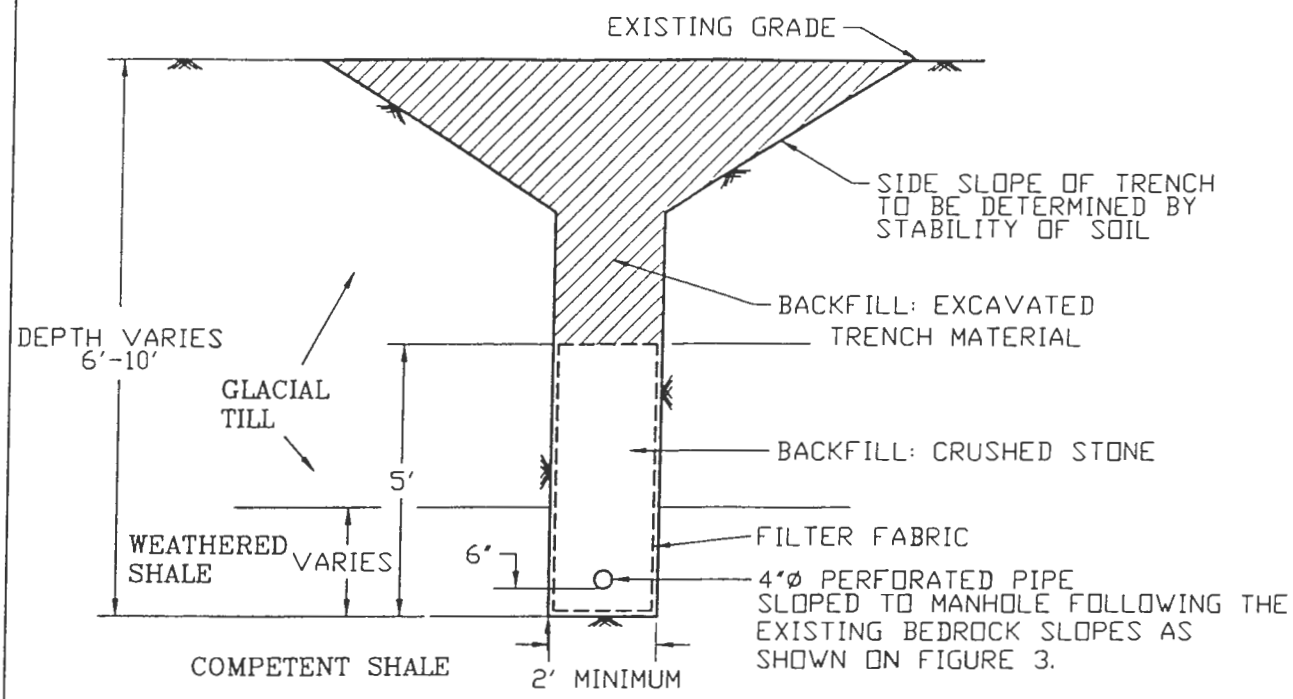
SCALE: 1" = 600' | DATE: APRIL 1996 | REV: A

In-situ Treatment Alternatives : MC-3, Air Sparging, & MC-3a, Funnel and Gate

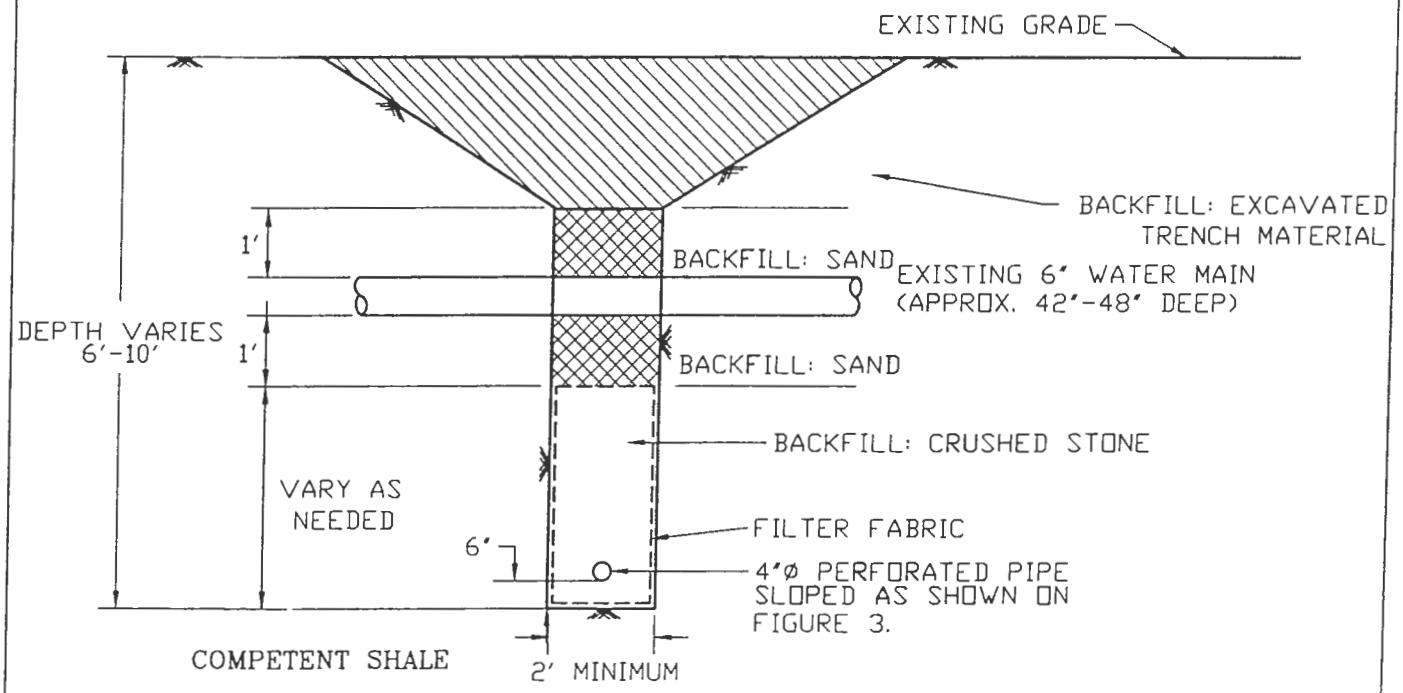
- *Air Sparging - VOCs are Removed by Air Injection into Groundwater*
- *Funnel & Gate - An Impermeable Wall, (Funnel), Diverts Groundwater to a Permeable Treatment Zone, (Gate).*

MC-4, Pump and Treat Alternative No. 1, Collection and Activated Carbon

- *Groundwater is Collected via Trenches and Pumped to a Treatment Facility*
- *Treatment Involves Filtration, Activated Carbon Sorption, and Surface Water Discharge*
- *Proven Technology for Removal of VOCs from Water*



TYPICAL SECTION



DETAIL OF WATER MAIN INTERSECTION

NOTES:

1. EXCAVATION FOR THE INTERCEPTOR TRENCH IS TO BE MADE TO THE TOP OF COMPETENT BEDROCK. (SEE APPENDIX FOR BORING LOGS)

2. MINIMUM TRENCH WIDTH IS 2 FEET.

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SENECA ARMY DEPOT
ASH LANDFILL

DEPT: ENVIROMENTAL ENGINEERING
Dwg. No.

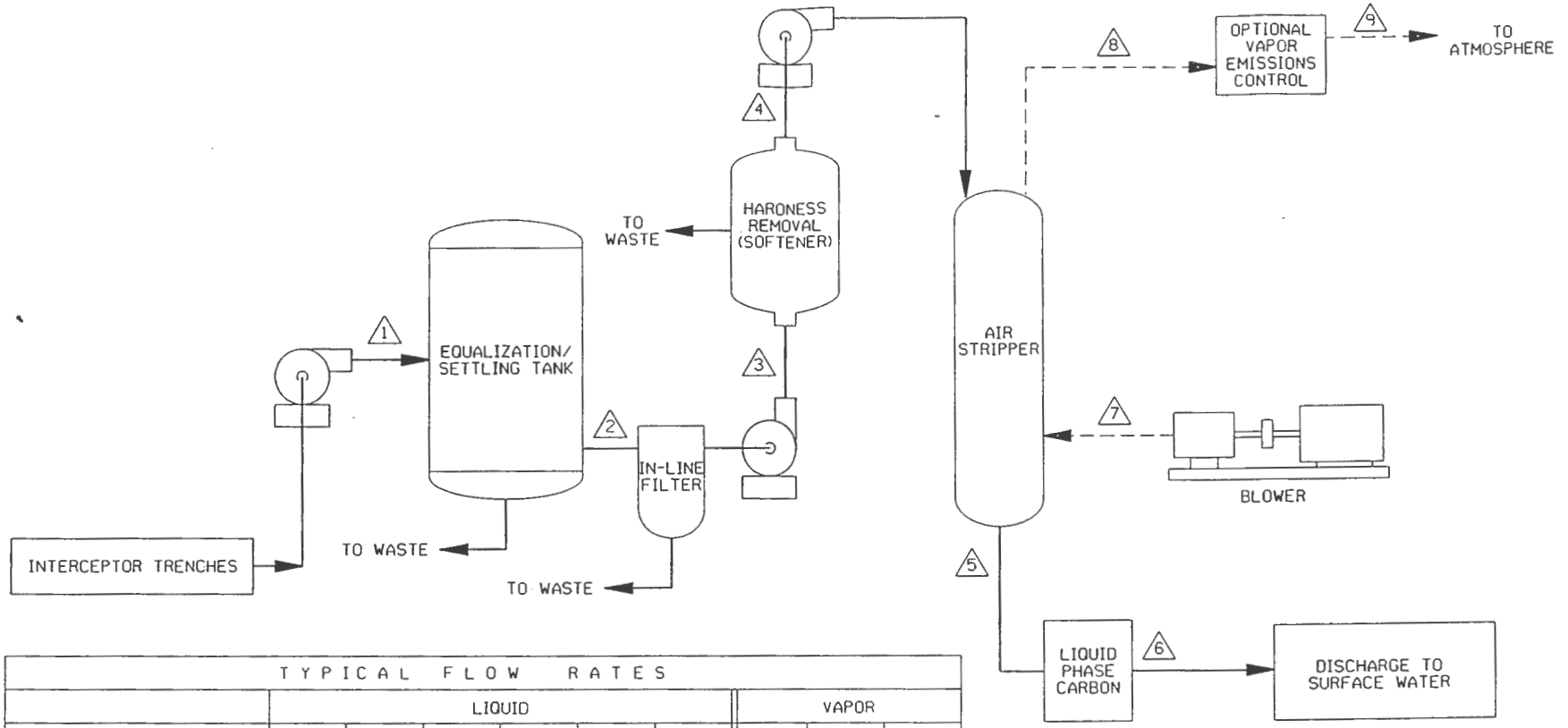
FIGURE 5-7 CROSS SECTIONS GROUNDWATER COLLECTION AND TREATMENT SYSTEM

SCALE: NONE
DATE: SEPTEMBER 1995
REV: 1

ACAD\SENECA\ELIZA\FIG3

MC-5, Pump and Treat Alternative No. 2, Collection and Air Stripping

- *Groundwater is Collected via Trenches and Pumped to a Treatment Facility*
- *Treatment Involves Air Stripping, Activated Carbon Polishing and Surface Water Discharge*
- *Proven Technology for Removal of VOCs from Water*



TYPICAL FLOW RATES									
	LIQUID						VAPOR		
STREAM NO.	1	2	3	4	5	6	7	8	9
FLOW RATE (gpm)	20-30	25	25	25	25	25			
TCE (ug/L)	100	100	100	100	<5	<3			
1.2 DCE (ug/L)	100	100	100	100	<5	<3			
HARDNESS (mg/L)	320	320	320	0	0	0			
TSS (mg/L)	180	180	10	5	5	5			
FLOW RATE (m3/S)							0.12	0.12	0.12
TCE (ppmV)							0	0.26	0.03
1.2 DCE (ppm V)							0	0.43	0.04

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FEASIBILITY STUDY
ASH LANDFILL

ENVIRONMENTAL ENGINEERING | DWG NO. 720446-01026

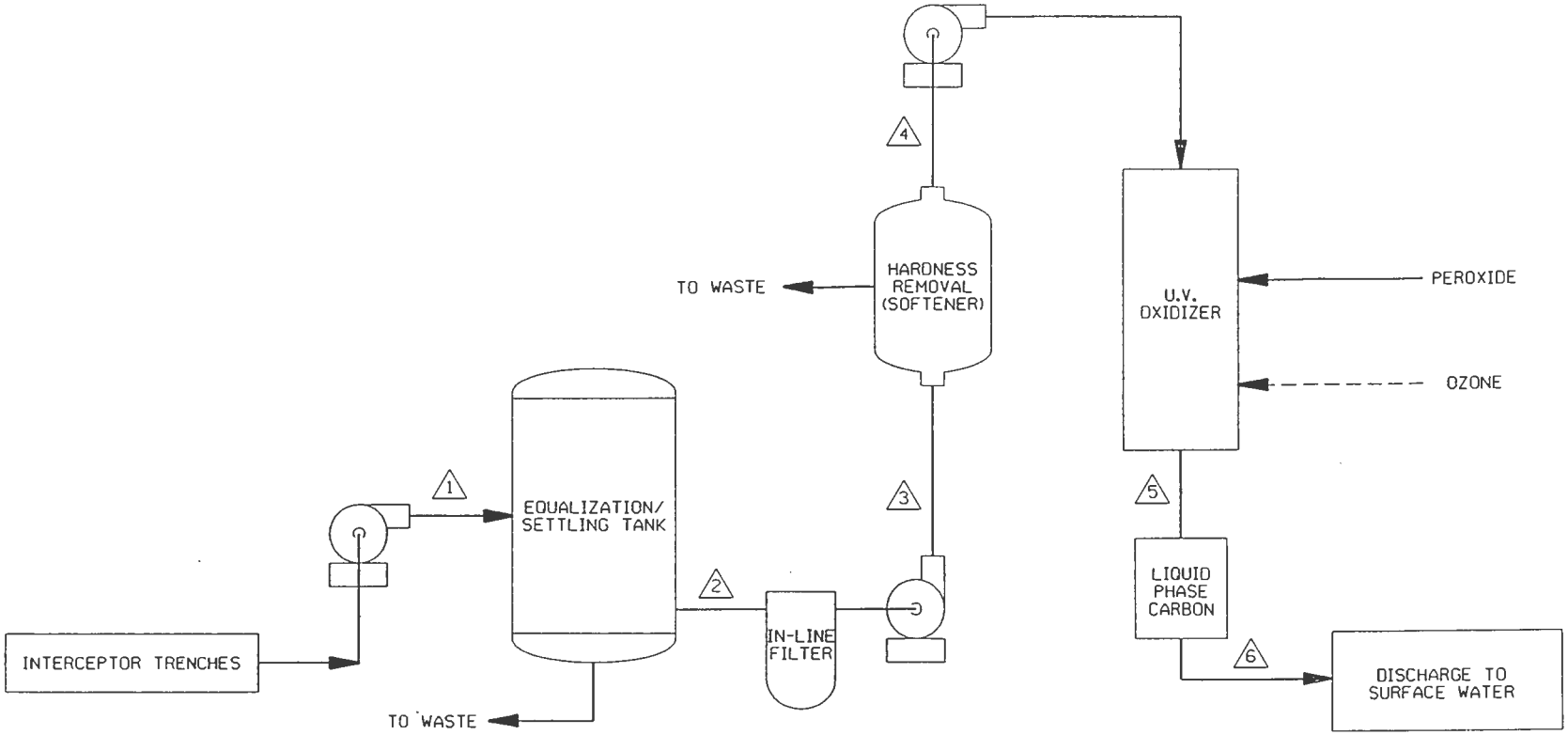
FIGURE 5-8
ALTERNATIVE MC-5
PROCESS FLOW SCHEMATIC

SCALE 1" = 250' | DATE MAY 1996

GRAPHICS\SENECA\FS\C&PTB.CDR

MC-6, Pump and Treat Alternative No. 3, Collection and UV Oxidation

- *Groundwater is Collected via Trenches and Pumped to a Treatment Facility*
- *Treatment Involves Filtration,UV Oxidation, Activated Carbon and Surface Water Discharge*
- *Proven Technology for Removal of VOCs from Water*



TYPICAL FLOW RATES						
STREAM NO.	1	2	3	4	5	6
FLOW RATE (gpm)	20-30	25	25	25	25	25
TCE (ug/L)	100	100	100	100	<5	<5
1,2 DCE (ug/L)	100	100	100	100	<5	<5
HARDNESS (mg/L)	320	320	320	0	0	0
TSS (mg/L)	180	180	10	5	5	5

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SENECA ARMY DEPOT ACTIVITY
FEASIBILITY STUDY
ASH LANDFILL

ENVIRONMENTAL ENGINEERING | DWG NO 720446-01026

FIGURE 5-9
ALTERNATIVE MC-6
PROCESS FLOW SCHEMATIC

SCALE 1" = 250' | DATE MAY 1996

GRAPHICS\SENECA\FS\CAPTB.CDR

MC-7, Pump and Treat Alternative No. 4, Collection via Trenches and Two- Stage Biological Treatment

- *Groundwater is Collected via Trenches and Pumped to a Treatment Facility*
- *Treatment Involves aTwo-Stage Biological Reactor, Activated Carbon and Surface Water Discharge*
- *Developed and Licenced by Prof. Jewell from Cornell*
- *Innovative Technology for Removal of VOCs from Water*
- *Treatability or Pilot Testing Required*

Table 3-5
Summary Cost Breakdown for Source Control Alternatives

SOURCE CONTROL (SC) ALTERNATIVES

Alternative Number	Description	Capital Cost	O&M Present Worth	Total Present Worth Cost
SC-1	No Action	$0	$0	$0
SC-2	Off Site Disposal	$17,500,000	$0	$17,500,000
SC-3	Consolidate and Cap	$1,370,000	$490,000	$1,860,000
SC-4	Soil Washing & Solidification	$31,500,000	$490,000	$32,000,000
SC-5	Off site Disposal Debris Piles Only/Cover	$237,063	$490,000	$727,063

Table 3-6

MIGRATION CONTROL (MC) ALTERNATIVES

Alternative Number	Description	Capital Cost	O&M Present Worth	Total Present Worth Cost
MC-1	No-Action	$0	$0	$0
MC-2	Natural Removal/ Institutional Controls	$160,000	$794,000	$954,000
MC-3	In-Situ Air Sparging	$668,000	$1,790,000	$2,458,000
MC-3a	Funnel and Gate System/Iron Filings	$422,00	$601,622	$1,023,622
MC-4	Liquid Phase Carbon Adsorption	$668,000	$1,703,000	$2,371,000
MC-5	Air Stripping	$543,000	$1,222,000	$1,765,000
MC-6	UV Oxidation	$556,000	$1,308,000	$1,864,000
MC-7	Two Stage Biological Treatment	$710,000	$1,492,000	$2,202,000

Ecological Risk Assessment

January 21,1997

Julia Schulten, Ph. D.

PARSONS ENGINEERING SCIENCE

Tonight's Topics

- Why Do We Do Risk Assessment
- What is Ecological Risk Assessment
- How Do We Do Ecological Risk Assessment
- What is the Relationship Between Risk Assessment and Site Cleanup

WHY DO WE DO RISK ASSESSMENT

- Part of the "*Superfund*" process and the Army's Remedial Investigation process
  - Must determine site's current effects
  - Must be used in cleanup planning

What is Ecological Risk Assessment

- It is a process that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to hazardous substances

- Risk management involves selection of a course of action in response to a risk. It may involve factors, such as social, legal, political, or economic ones, in addition to risk assessment results.

HUMAN HEALTH RISK ASSESSMENT

ECOLOGICAL RISK ASSESSMENT

How Do We Do Risk Assessment

- Identification of Chemicals of potential concern
- Exposure assessment
- Toxicity assessment
- Risk characterization

Identification of Chemicals of Potential Concern

- Sample collection from soil, groundwater, surface water, sediment
- Lab analysis
- Data review
- Calculate reasonable maximum exposure concentration

Chemicals at SEAD-16 and SEAD-17

- Fuel-related compounds
- Solvent-type compounds
- Metals
- Ammunition constituents
- Pesticides and Herbicides

Exposure

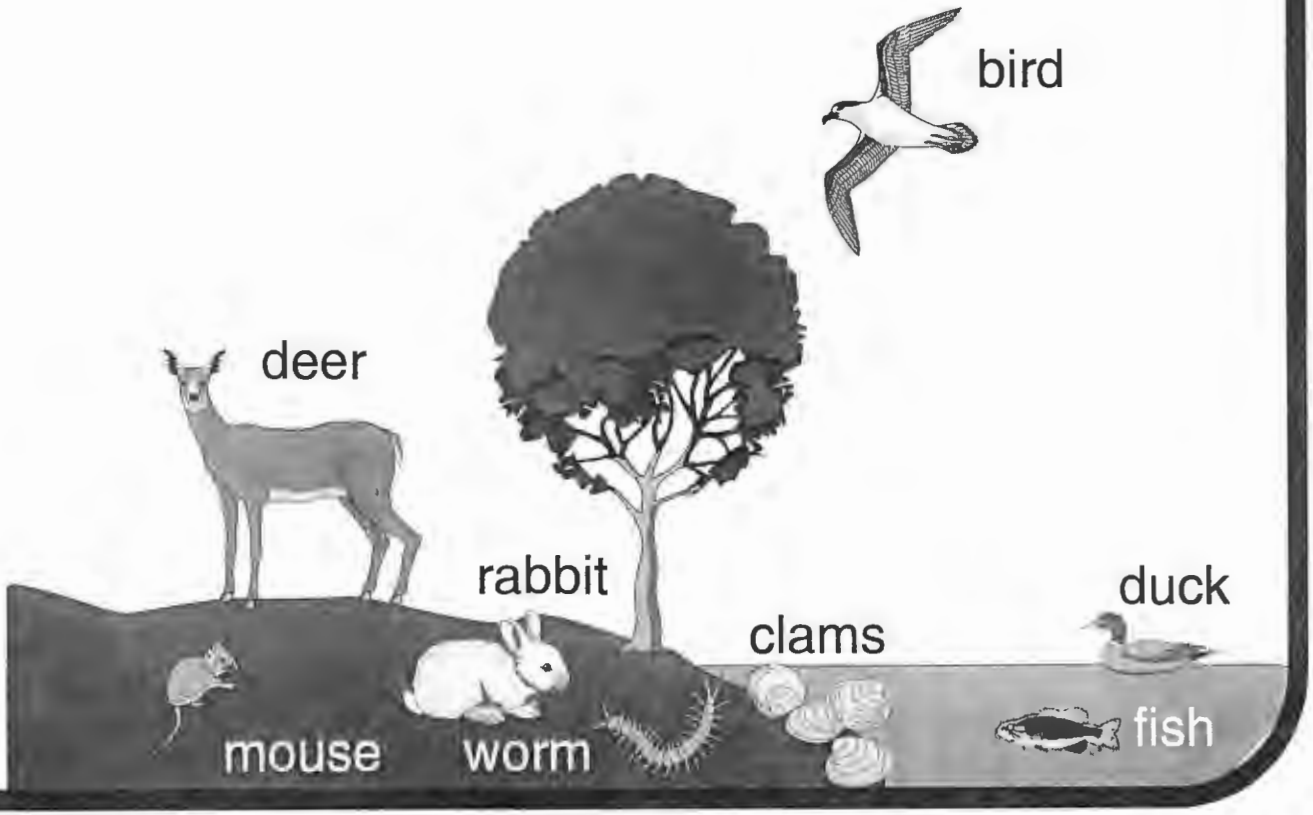
- *Chemical is present and can be contacted*
- *Receptor is or may be at point of contact*

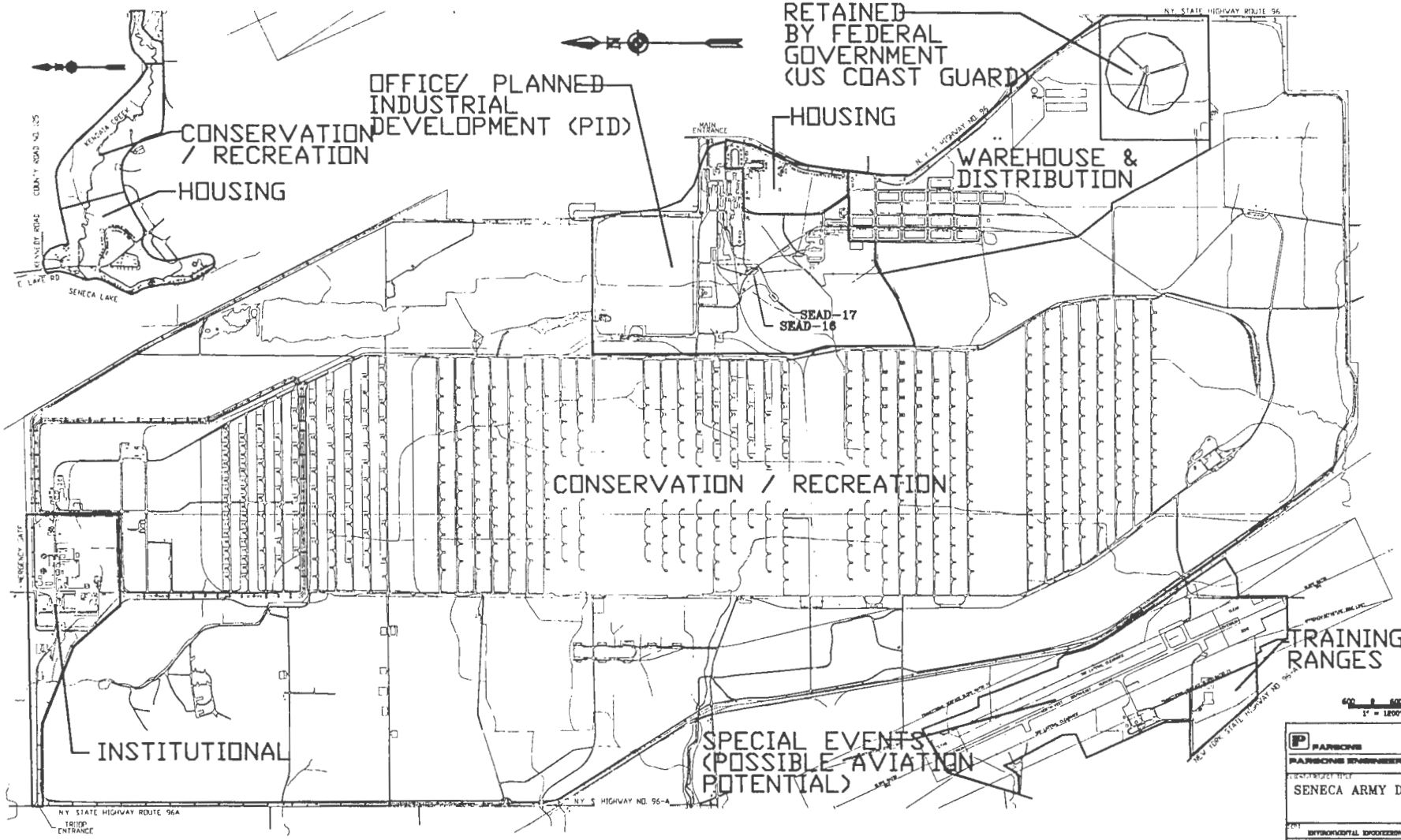
EXPOSURE ASSESSMENT

HUMAN HEALTH ASSESSMENT

Homo sapiens

ECOLOGICAL ASSESSMENT





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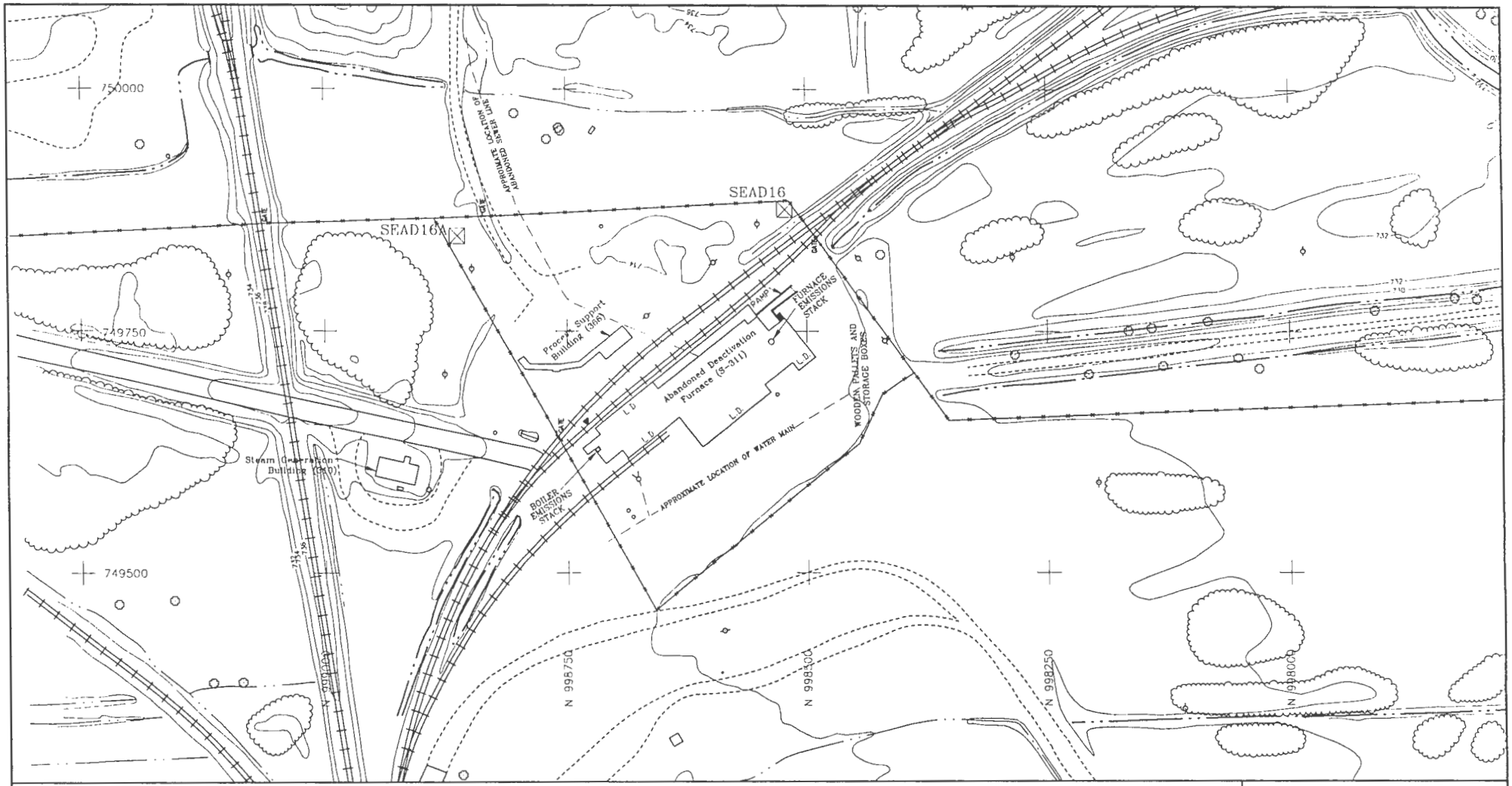
SENECA ARMY DEPOT ACTIVITY

ENVIRONMENTAL ENGINEERING | 735668-01000

SEAD-16 AND SEAD-17
SITE LOCATION AND
LAND USE

1" = 1200' | JANUARY 1997 | A

ACAD\SENECA\LANDUSE\SD16-17.DWG.DWG



LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- 760 GROUND SURFACE ELEVATION CONTOUR
- SURVEY MONUMENT
- L.D. LOADING DOCK
- ROAD SIGN
- DECIDOUS TREE
- FIRE HYDRANT
- MANHOLE
- GUIDE POST
- POLE
- UTILITY BOX
- CORDINATE GRID (250' GRID)
- OVERHEAD UTILITY POLE
- MAILBOX/RR SIGNAL

50 0 50 100
1" = 100'

N

ACAD\SENECA\16-17RIF\SD16S1.DWG

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CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-16 ABANDONED DEACTIVATION FURNACE

DEPT: ENVIRONMETAL ENGINEERING
Dwg No: 729696-01001

FIGURE 1-3
SEAD -16 SITE PLAN

SCALE: 1" = 100'
DATE: DECEMBER 1996
REV: A

ACAD\SENECA\16-17RIF\SD17S1.DWG

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CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-17 ACTIVE DEACTIVATION FURNACE

DEPT	Proj. No.
ENVIRONMENTAL ENGINEERING	729896-01001

FIGURE 1-4
SEAD 17 SITE PLAN

SCALE	DATE	DRV
1" = 100'	DECEMBER 1996	A

Representative Ecological Receptors at SEAD-16 and SEAD-17

Receptor	Represents
Deer mouse	Small mammals
Creek Chub	Fish

Measuring Exposure

- How is the receptor exposed?
- How much of the chemical in the soil, water, or sediment gets into the receptor?
- How much of the chemical gets to the receptor through its food?
- How much time does the receptor spend at the site?

Ecological Exposure Scenarios

	Deer mouse	Creek chub
Ingestion of soil	X	--
Skin contact with soil	O	--
Ingestion of food	X	--
Inhalation of dust and vapors	O	--
Contact with surface water	--	X

X = evaluated quantitatively

O = evaluated qualitatively

-- = not a pathway

TOXICITY ASSESSMENT

DOSE

EFFECT

Liver

Kidney

Cancer

Nervous System

Skin

Blood

Lungs

Risk Characterization

$$RISK = \frac{Exposure\ Level}{\text{“Safe” Dose}}$$

Target is less than 1

? ? ? ? ? ? ? ? ? ?

Uncertainty

- *Were all contaminated locations sampled?*
- *Do sample results exactly represent exposure concentrations?*
- *How sensitive are the lab instruments?*
- *Are there chemicals that were not analyzed for?*
- *What will future land uses be?*
- *How will future receptors contact contaminants?*
- *Do the deer mouse and creek chub adequately represent all biota?*
- *What are the toxic effects of contaminants at this site?*
- *What is the true ecological effect?*

Risk Summary

- *Conclusions based on risk numbers as well as uncertainty*
- *Focus on ecological significance*

MINUTES
RESTORATION ADVISORY BOARD
JUNE 26, 1996 MEETING MINUTES

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA
Carla Struble, U.S. Environmental Protection Agency
Dan Geraghty, NYS Department of Health

Government RAB Members Absent:

Kamal Gupta, NYS Department of Environmental Conservation (excused)

Community RAB Members Present:

Diane DeMuth, Dick Durst, Anne Herman, Frank Ives, Mary Ann Krupsak, Al Legasse, Richard Lewis, Harold Kugelmass, Henry Van Ness, Russell Miller, Carmen Serrett, Richard Sisson, David Wagner

Community RAB Member Absent:

Lucinda Sangree, Estelle Coleman, Brian Dombrowski

Government and Technical Support Personnel Present:

Thomas Enroth, SEDA Environmental Engineer
Janet Fallo, SEDA Environmental Engineer
Jerry Whitaker, SEDA Base Transition Coordinator
Beverly Lombardo, SEDA Public Affairs Officer
Susan Cooper, SEDA Secretary
Robert Scott, NYS Department of Conservation
Keith Hoddinott, U.S. Army Center for Health Promotion and Preventive Medicine
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Dorothy Richards, U.S. Army Corps of Engineers, Huntsville Division
Michael Duchesneau, Parsons Engineering Science, Inc.
Barry O'Melia, Woodward-Clyde
Rick Newill, Woodward-Clyde

Others Present:

Chris Raddell, Community/Contractor
Joanne Howard, Community/Contractor
Brian Howard, Community Member
Nellie Legasse, Community Member

2. The June Restoration Advisory Board meeting was called to order at 7:00 p.m. by Stephen Absolom, BRAC Environmental Coordinator for SEDA, who welcomed all members and support staff to the NCO Club and outlined the evening's agenda. Draft minutes from the May RAB meeting were then approved and accepted into record.

3. Mike Duchesneau from Parsons Engineering Science, Inc. provided an overview on the Environmental Cleanup Process. His briefing included governing regulations, milestones, and the process under which solid waste management units are listed, classified, and remediated. Copies of Mr. Duchesneau's briefing will be included in the next mailing along with the minutes of this meeting.

4. A discussion was held between Mike Duchesneau of Parsons Engineering Science, Inc. and Dr. Dick Durst who asked if Parsons was aware of the newly developed application of iron to reduce the contamination level in a groundwater plume such as the plume at the Ash Landfill. Mr. Duchesneau responded that he was aware of this technology and it was currently being implemented in a full scale application model through another office of Parsons located in North Carolina. The process uses a media, such as iron in the form of iron filings, placed such that the contaminated groundwater passes through the iron and is changed in the process. The iron would oxidize similar to rust forming on iron exposed to air and water. This section of iron can be thought of as a gate in a underground wall so all water would be stopped by the wall except for a section where the gate is installed as part of the wall. The water can pass through the gate of iron. This gate can be removed and replaced with new iron when the media needs to be changed. Mr. Duchesneau then discussed with Dr. Durst reasons this technology may not be applicable for the Ash Landfill. He commented that this innovative technology has been successfully demonstrated in the laboratory or in limited pilot scale applications. However, he has not yet seen results from the full scale demonstration studies. In addition, the iron may prematurely oxidize as the depth to groundwater at the Ash Landfill varies considerably during the year. This may render the treatment useless. An application of this type of technology at the Ash Landfill would require an extensive pilot study if it were to be considered.

5. A brief overview of the BRAC Cleanup Plan and its goals was given by Mr. Absolom. After introductions of all present, the responsibilities of the Community Co-Chair position were reviewed. Presentations were given by Richard Durst, David Wagner, and Anne Herman, RAB members interested in filling this position. Written ballots were collected from the 15 community RAB members present with majority vote electing Richard Durst as Community Co-Chair.

6. Discussion of Draft Charter followed. Each section was examined and commented on with changes identified and agreed upon for inclusion in the final charter to be approved for adoption at the August RAB meeting.

7. General discussion indicated possible topics for future presentations. Suggestions should be made to Mr. Absolom within the next week for preparation of an August agenda.

8. The next Restoration Advisory Board meeting will be held on Tuesday, August 20, 1996 at 7:00 p.m. at the SEDA NCO Club.

9. The meeting was adjourned at 9:25 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

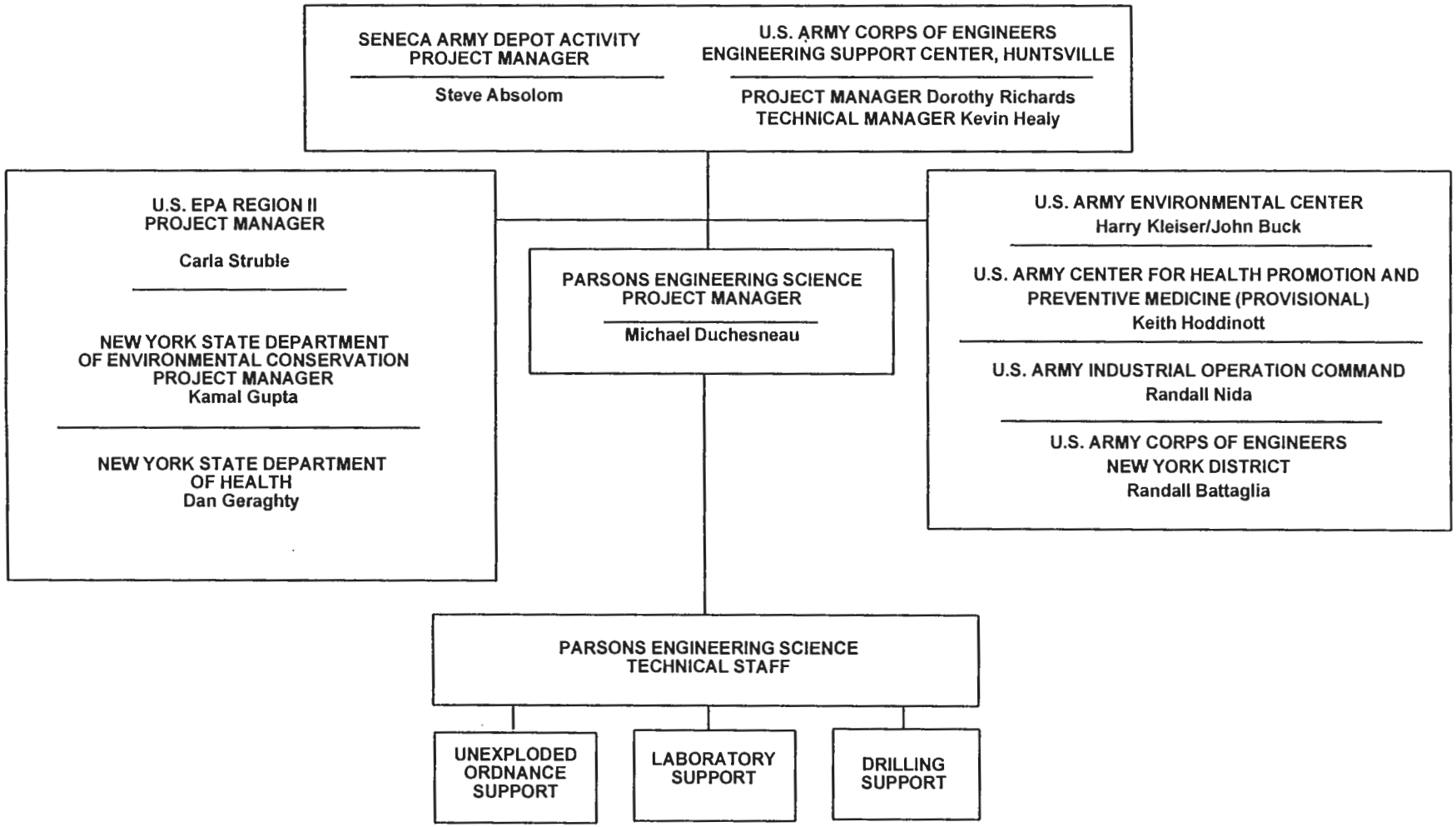
PRESENTATION TO THE RESTORATION ADVISORY BOARD

JUNE 26, 1996

PARSONS ENGINEERING SCIENCE, INC

PARSONS

SENECA ARMY DEPOT ACTIVITY PROJECT ORGANIZATION



UPDATE ON THE CLEAN-UP PROCESS

- ☑ **The Clean-up Process**
- ☑ **SWMU Investigation/Classification Status Update**
- ☑ **RI/FS's Status Update**
- ☑ **Completed Remedial or Removal Actions**

THE CLEAN-UP PROCESS

GOVERNING REGULATIONS

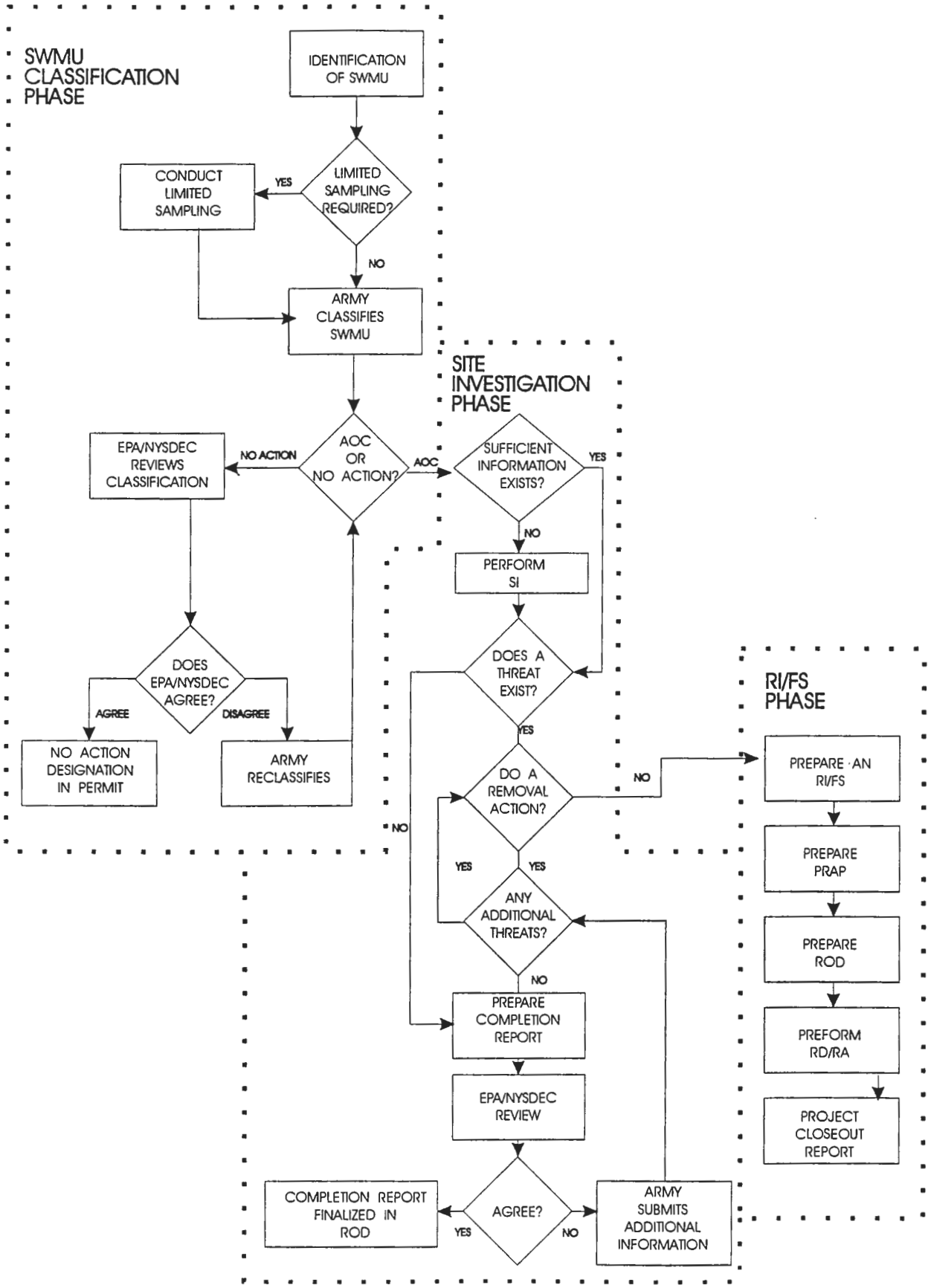
- **Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) or Superfund**
- **Superfund Amendments and Reauthorization Act of 1986 (SARA)**
- **New York Rules for Inactive Hazardous Waste Disposal Sites**
- **Resource Recovery and Conservation Act (RCRA)**

INITIAL MILESTONES OF CLEANUP PROCESS

- ☑ **Listed on the National Priority List (NPL)**
  - ➢ **Hazard Ranking System(HRS)**
  - ➢ **August 1990, Seneca Army Depot Activity Listed on NPL**

- ☑ **Interagency Agreement (IAG) or Federal Facility Agreement (FFA)**
  - ➢ **Agreement between EPA, NYSDEC and the Army**
  - ➢ **Signed by all parties on Jan, 21 1993**

SWMU CLASSIFICATION FLOWCHART



THE CERCLA PROCESS at SEDA

PHASE	ACTIVITIES
IDENTIFICATION	SWMU Clasification
DELINEATION	Expanded Site Inspection (ESI) Remedial Investigation (RI)
EVALUATION	Risk Assessment
PRE-DESIGN	Feasibility Study (FS) Project Remedial Action Plan (PRAP) Record of Decision (ROD)
DESIGN	Plans and Specifications
REMEDIAL ACTION	Construction / Operation
MONITORING	Long Term Monitoring

SWMU INVESTIGATION/CLASSIFICATION PROCESS STATUS REPORT

PARSONS ENGINEERING SCIENCE

SWMU CLASSIFICATION REPORT

- **All 75 SWMUs Have Been Classified as Either No Action or Area or Area of Concern (AOC)**
- **Final SWMU Classification Report Issued on September 16, 1994**
- **First Primary Document Finalized Under IAG**

SWMU CLASSIFICATION SUMMARY

Federal Facilities Agreement (FFA) Status	Number of SWMUs or AOCs
No Action	24
Completion Report/ROD	14
Removal Action/Completion Report/ROD	8
RI/FS/PRAP/ROD	29
TOTAL	75

ROD - Record of Decision
RI/FS - Remedial Investigation/Feasibility Study
PRAP - Proposed Remedial Action Plan
SWMU - Solid Waste Management Unit
AOC - Area of Concern

7 HIGH PRIORITY ESI MILESTONES

- ☑ Draft Report (for EPA/NYSDEC Review) issued July 8, 1994
- ☑ Draft-Final Report Issued on May 11, 1985
- ☑ No Additional NYSDEC Comments will be Provided
- ☑ EPA Comments Received on October 18, 1995
- ☑ Final Report Issued on December 11, 1995
- ☑ Army Recommends RI/FS/PRAP/ROD at SEADs-4, 16, 17 25, 26, and 45 and Removal Action/Completion Report/ROD at SEAD-24

3 MODERATE PRIORITY ESI MILESTONES

- ☑ Draft Submitted on August 5, 1994
- ☑ Draft-Final Report Issued on June 9, 1995
- ☑ No Additional NYSDEC Comments will be Provided
- ☑ EPA Comments Received on October 18, 1995
- ☑ Final Report Issued on December 11, 1995
- ☑ Army Recommends:
  RI/FS/PRAP/ROD for SEADs-11, 13, 57

8 MODERATELY LOW PRIORITY ESI MILESTONES

- Field Work Completed in July 1994
- Draft Report Submitted on April 14, 1995
- Draft -Final Issued on January 11, 1996
- Army Recommends:
  - RI/FS/PRAP/ROD at SEADs-5, 12, 59
  - Completion Report/ROD for SEADs-9, (43,56,69), 44, and 58
  - Removal Action/Completion Report/ROD for SEAD-50

7 LOW PRIORITY ESI MILESTONES

- ☑ Fieldwork Completed in July 1994
- ☑ Draft Report Submitted on April 6, 1995
- ☑ Draft -Final Report Submitted on May 3, 1996
- ☑ Army Recommends:
  - RI/FS/PRAP/ROD at SEADs-60, 63, 64 and 71
  - Completion Report/ROD for SEADs-62, and 70
  - Removal Action/Completion Report/ROD for SEAD-67

REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) STATUS REPORT

PARSONS ENGINEERING SCIENCE

REMEDIAL INVESTIGATION (RI) AND FEASIBILITY STUDY (FS) OF THE FORMER OPEN BURNING GROUND (MILESTONES)

- ☑ **Remedial Investigation**
  - ➢ Final Submitted on September 9, 1994
  - ➢ Accepted as Final
- ☑ **Feasibility Study**
  - ➢ Submitted Draft for Regulatory Review on March 10, 1994 with EPA and NYSDEC
  - ➢ Received NYSDEC Comments on May 5, 1994.
  - ➢ Received EPA Comments on September 30, 1994
  - ➢ Formal Consultation with EPA and NYSDEC Occured until January 1996
  - ➢ Draft-final FS Submitted on March 19, 1996
  - ➢ EPA and NYSDEC comments Received on May 2, 1996

CLEAN-UP GOALS FOR OB GROUNDS

- ☑ 500 mg/Kg max. for Lead in Soils On-site
- ☑ 16 mg/Kg max. for Copper in Sediments in Reeder Creek
- ☑ 31 mg.Kg max. for Lead in Sediments in Reeder Creek
- ☑ No Runoff Without Sedimentation
- ☑ Unexploded Ordnance Clearance, as Required

REMEDIAL INVESTIGATION (RI) AND FEASIBILITY STUDY (FS) OF THE ASH LANDFILL (MILESTONES)

- ☑ **Remedial Investigation**
  - ➢ **Final Submitted on October 3, 1994**
- ☑ **Source Removal Action Completed in June 1995**
- ☑ **Feasibility Study**
  - ➢ **Draft Submitted on September 19, 1994**
  - ➢ **Groundwater Modeling Report Submitted on January 4, 1996**
  - ➢ **Draft-final FS Submitted on December 15, 1995**
  - ➢ **EPA and NYSDEC comments Received in March 1996**
  - ➢ **Final FS due on June 21, 1996**

REMEDIAL INVESTIGATION (RI) AND FEASIBILITY STUDY (FS) OF THE FIRE TRAINING AREAS (SEAD-25 and SEAD-26)

- ☑ **Remedial Investigation**
  - ➢ **Fieldwork Completed in December, 1995**
  - ➢ **Second Round of GW Sampling Completed April, 1996**
- ☑ **Pre-Draft (for Army Review) Submitted in April, 1996**
- ☑ **Draft due on June 28, 1996**

COMPLETED REMEDIAL ACTIONS STATUS

COMPLETED REMOVAL ACTION HIGHLIGHTS

- Performed at the Ash Landfill at a Cost of $6 million
- Objectives:
  - Remove Existing Threat to Human Health and the Environment
  - Eliminate Source of Groundwater Plume
  - Streamline RI/FS Process
- Treatment Goals (NYSDEC TAGM Values)
  - 700 ug/Kg TCE
  - 300 ug/Kg DCE
- Approximately 23,000 Cubic Yards (35,000 Tons) Processed and Returned to the Site
- Selected Remedial Alternative
  - Excavation, Low Temperature Thermal Desorption
  - Thermal Oxidation of Off-Gas
- Remedial Activities Completed, June 1995

MINUTES
RESTORATION ADVISORY BOARD
AUGUST 20, 1996 MEETING MINUTES

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Carla Struble, U.S. Environmental Protection Agency
Kamal Gupta, NYS Department of Environmental Conservation

Government RAB Members Not Present:

Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Dick Durst/Community Co-Chair, Anne Herman, Henry Van Ness,
Carmen Serrett, Brian Dombrowski, Richard Sisson, Al Legasse,
David Wagner, Harold Kugelmass, Estelle Coleman

Community RAB Member Not Present:

Lucinda Sangree, Frank Ives, Mary Ann Krupsak,
Richard Lewis, Russell Miller, Diane Demuth

Government and Technical Support Personnel Present:

LTC Stephen Brooks, SEDA Commander
Thomas Enroth, SEDA Environmental Engineer
Janet Fallo, SEDA Environmental Engineer
Jerry Whitaker, SEDA Base Transition Coordinator
Beverly Lombardo, SEDA Public Affairs Officer
Susan Cooper, SEDA Secretary
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Dorothy Richards, U.S. Army Corps of Engineers, Huntsville Division
Eliza Schacht, Parsons Engineering Science, Inc.
Robert Mutaw, Woodward-Clyde
Rick Newill, Woodward-Clyde
Marsden Chen, New York State Department of Environmental Conservation
Bruce Nelson, Malcom Pirnie

Others Present (from sign-in sheet):

Chris Raddell, Community Member/Contractor
Nellie Legasse, Community Member
Karl Bechler, Community Member
Bob Gagnon, Community Member/Contractor
Patricia Jones, LRA
M. Zackowski, Community Member

2. LTC Stephen Brooks welcomed members and support staff to the August Restoration Advisory Board in the NCO Club and delivered opening remarks.

3. Stephen Absolom outlined the evening's agenda and asked for introductions. Al Legasse expressed concerns about water, a valuable resource to the community. Minutes from the May RAB meeting were then approved and accepted into record. June minutes were discussed and corrections noted with final minutes to be provided by September's meeting.

4. Bob Mutaw of Woodward-Clyde provided a briefing on locating environmental sites as it applies to BRAC. The overview consisted of the Environmental Baseline Survey's category definitions, parcel qualifiers, methods used to research sites, and findings.

5. Eliza Schacht, Parsons Engineering Science, Inc. then gave a presentation on the Proposed Remedial Action Plan for the Open Burning (OB) Grounds at Seneca. After discussing the background of the 30-acre site, field sampling was explained and residual compounds identified. Remediation objectives were listed and remedial alternatives shown with their evaluating criteria and cost estimates. The Preferred Alternative, Alternative 4, suggests Off-Site Disposal to a licensed, permitted facility as the most cost effective for $2.9 to $4.5 million with a proposed start date for remediation of October 1997.

6. Execution of the Final Charter ensued. All comments from the last meeting were incorporated into the draft final and sent to RAB members prior to the meeting. The Charter was signed by the Army and Community Co-Chairs.

7. General discussion items follow:

a. A request was made to provide RAB members with maps better illustrating the OB/OD Grounds' contamination sites identified in para 5 above. These documents will be provided before the September meeting.

b. A question on cost difference for off-site disposal was raised. Costs for landfilling off-site is presently very competitive compared to costs incurred from on-site disposal and construction. Concerns for off-site disposal as a means of "passing our problem to someone else" were discussed. The current known methods of safe disposal were fully explained by Marsden Chen of the New York State Department of Environmental Conservation. He also stated that he would provide permitted landfill specifications to Steve Absolom for distribution to RAB members.

c. Reuse efforts at the OB Grounds was questioned. Before offered for reuse, the area would be checked for unexploded conventional ordnance by individuals trained in that area.

d. Radon testing on the installation was brought up. It was reported that all buildings were tested with only two being above the levels established as safe.

e. Possible topics for future presentations generated several viable options.

(1) A presentation by the Local Redevelopment Authority (LRA) to include future uses of the depot as well as the correlation between the RAB and LRA's activities and their impacts.

(2) Risk Assessment for residential and/or industrial scenarios and how it's developed in accordance with USEPA and State guidance.

(3) Radiological contamination--it's impact, extent, future impact, and findings.

(4) Ongoing activity and status/milestones of Ash Landfill, Remedial Investigation for the Fire Training Areas and Deactivation Furnaces and what was found.

8. The next Restoration Advisory Board meeting will be held on September 17, 1996 at 7:00 p.m. at the SEDA NCO Club.

9. The meeting was adjourned at 9:25 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

SENECA ARMY DEPOT ACTIVITY, NY
RESTORATION ADVISORY BOARD CHARTER

I. Purpose of the Restoration Advisory Board (RAB)

The primary purpose of the Seneca Army Depot Activity (SEDA) RAB is to improve public participation in the environmental restoration process taking place at SEDA.

II. Functions of the RAB

1. The RAB will: function as a forum for open and interactive dialogue between government agencies and the public regarding environmental cleanup information; conduct regular meetings open to the public at convenient times and locations; keep meeting minutes; and make meeting minutes available to the public. The RAB brings together members who reflect diverse community interests to facilitate the flow of information, concerns, and needs between the local community, U.S. Army, N.Y. state regulators, and federal regulators.

2. The RAB will review issues related to cleanup, review cleanup strategies, track current and future activities and provide perspectives on cleanup priorities. The RAB and its members will communicate with community members and interest groups, serve as direct and reliable conduits of information to and from the community, and review and comment on various technical reports and cleanup plans.

III. Basis and Authority for the RAB Charter

The basis and authority for this charter are contained in the National Defense Authorization Act for Fiscal Year 1995 (Public Law 103-337), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986, particularly section 120(a), 120(f), and 10 USC 2705, enacted by Section 211 of SARA, and DoD and United States Environmental Protection Agency RAB Implementation Guidelines of September 1994, plus subsequent acts of United States Congress that here-in apply.

IV. Structure of the RAB

1. The RAB will be co-chaired by the BRAC Environmental Coordinator (BEC) for Seneca Army Depot Activity (or his/her alternate) and a community member. The co-chairs will have responsibility for managing the meetings.

2. Government RAB members include representatives from the installation (the BEC), U.S. Environmental Protection Agency, and N.Y. State. Other representatives from

government agencies attend the RAB meetings as technical support staff but will not be named as RAB members. All other RAB members will be part of the Finger Lakes communities that are affected by Seneca Army Depot Activity.

3. The community co-chair is selected by secret ballot and majority vote of community RAB members present as established by the RAB. The term of office for the community co-chair position is indefinite.

4. The RAB community members are responsible for terminating a co-chair who is ineffective or detrimental to the progress of the RAB. Co-chair removal will be determined by the RAB community members in the future if necessary.

5. The RAB will meet at least quarterly at a location agreed upon by a consensus of the RAB members. Additional meetings or special focus meetings may be scheduled as the need arises.

6. Agenda items will be compiled by the co-chairs. Suggested topics should be given to the Army co-chair not later than 3 weeks prior to each meeting. The Army co-chair will be responsible for providing written notification to all RAB members of the upcoming agenda, date, time, and place of scheduled RAB meetings at least 2 weeks prior to each meeting.

7. The Army co-chair will be responsible for coordinating the recording and distributing of meeting minutes including a written list of attendees within 2 weeks after the meeting. Any comments on the minutes will be addressed at the next meeting. After the minutes are reviewed and revised, they will be available in the Information Repository at the Romulus Town Hall in Willard.

8. A draft copy of the minutes will be available to local newspapers and other media. This will reach members of the public interested in RAB activities who did not attend the meeting.

V. Roles and Responsibilities

1. **The Army co-chairperson will:**

   Coordinate with the community co-chairperson to prepare and distribute an agenda prior to each RAB public meeting.

   Ensure that Department of Defense employees participate in an open and constructive manner.

   Ensure that the RAB has the opportunity to participate in the SEDA environmental

restoration process.

Ensure that community issues and concerns related to restoration are addressed when raised.

Ensure that an accurate mailing list of interested parties is developed and maintained.

Provide relevant policies and guidance documents to RAB members in order to enhance the RAB operation.

Ensure that adequate administrative support is provided for meeting agendas and minutes, meeting locations, necessary document reproduction and mailings, and distribution of public notices in local newspapers.

Refer issues not related to restoration to an appropriate installation official.

Report RAB activities to the appropriate installation officials.

Ensure documents distributed to the RAB are also made available to the general public, as deemed appropriate in compliance with applicable laws and regulations.

2. **The Community Co-chairperson will:**

Coordinate with the Army co-chairperson and RAB members to prepare and distribute an agenda prior to each RAB public meeting.

Ensure that community members participate in an open and constructive manner.

Ensure that the RAB has the opportunity to participate in the SEDA environmental restoration process.

Ensure that community issues and concerns related to restoration are raised.

Ensure documents distributed to the RAB are also made available to the general public.

3. **The RAB Community Members will:**

Attend all RAB meetings.

Provide advice and comment on environmental restoration issues to appropriate governmental agencies.

Be responsible for representing and communicating community interests and concerns to

the RAB.

Members will serve as a direct and reliable conduit for information exchange between the community and restoration process decision makers.

Members will be available to review the various technical documents generated by the environmental restoration process at SEDA.

4. **The N.Y. State Regulatory Agency Member(s) will:**

Attend all RAB meetings.

Serve as an information, referral resource bank for communities, installations and agencies regarding installation restoration.

Review documents and other materials related to restoration.

Ensure that state environmental standards and regulations are identified and addressed by SEDA.

Facilitate flexible and innovative resolutions of environmental issues and concerns.

Assist in education and training for the RAB members.

5. **The U.S. Environmental Protection Agency (EPA) Member will:**

Attend all RAB meetings.

Serve as an information, referral and resource bank for communities, installations and agencies regarding installation restoration.

Review documents and other materials related to restoration.

Ensure that federal environmental standards and regulations are identified and addressed by SEDA.

Facilitate flexible and innovative resolutions of environmental issues and concerns.

Assist in education and training for the RAB members.

VI. RAB Attendance Requirements

RAB members are expected to attend all meetings. If a conflict occurs, the member

should notify one of the co-chairpersons that they will not be in attendance. Members unable to continue to fully participate may submit or be asked to submit their resignation in writing to the RAB.

VII. RAB Meeting Structure

1. The regular RAB meetings will be conducted monthly or as needed on the third Tuesday of the month at the Seneca Army Depot NCO Club or a location determined at the previous meeting.

2. Meetings will begin at 7:00 p.m. and end when RAB business has been completed, normally not lasting more than 2 hours. Special focus meetings will be held, when necessary, in addition to the regular meetings.

3. Each meeting will begin with a review of the previous meetings minutes. There will be time allotted on each agenda for public comments and an open discussion.

VIII. Procedure and Time Period for Review of Technical Documents

Technical documents will be reviewed by the RAB in the same time period as the regulatory staff, normally at least 30 days, so that the environmental restoration efforts at SEDA are not impeded. RAB members may provide written comments on documents which will be consolidated by the Army co-chairperson. An executive summary of large documents may be provided to RAB members and full documents will be available at the Information Repository. RAB members will be furnished a copy of documents in review at request.

IX. Amendments to this Charter

This charter may be amended by a simple majority vote of RAB members in attendance at a RAB meeting, if the amendment is consistent with the laws and regulations governing its existence.

X. Termination of this Charter

This charter will be terminated upon completion of the environmental restoration process at SEDA or as determined by the RAB.

XI. Effective Date of this Charter

The effective date of this charter shall be when it is accepted by a majority vote of RAB members and both co-chairs have signed the charter.

XII. Signatories to the RAB Charter

IN WITNESS WHEREOF, this charter was approved by the following members of the SEDA Restoration Advisory Board on the 20 day of Aug, 1996.

Stephen M. Absolom
Army Co-chair

Dick Durst
Community Co-chair

RAB MEETING

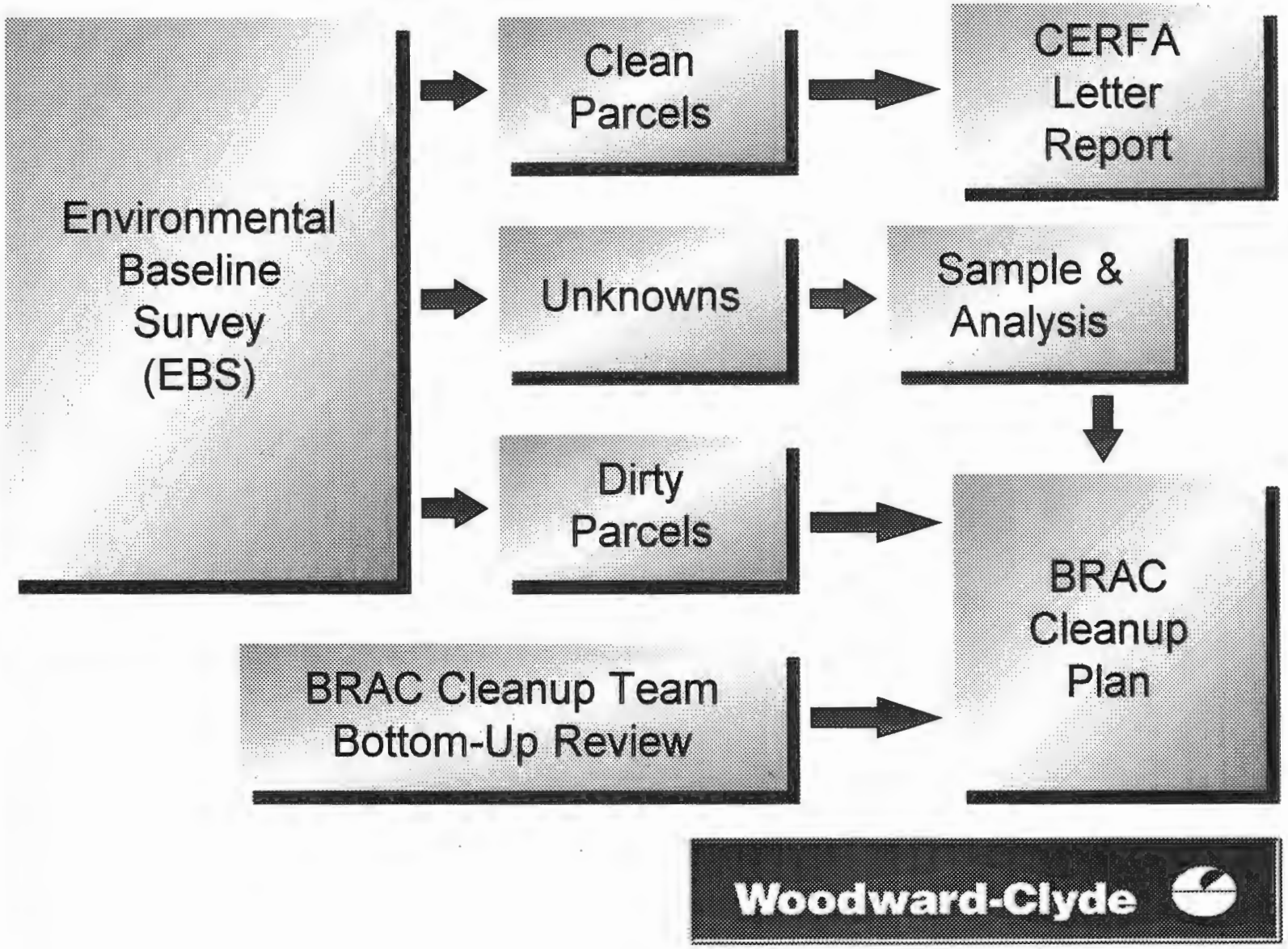
Purpose of presentation:

To inform the RAB of the methods used by Woodward-Clyde during the EBS process to ensure that all contaminated sites have been identified

August 20, 1996

Woodward-Clyde

BRAC Environmental Process



Woodward-Clyde

Environmental Baseline Survey

- **Scope:**

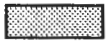
  All parts of the installation were looked at

- **Objective:**

  To determine the environmental condition of all property at SEDA

Woodward-Clyde

CERFA Category Definitions

Cat. #	Color	Environmental Condition of Property
1		Areas where no storage, for one year or longer, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent properties). Additionally, includes areas where no evidence exists for the release, disposal, or migration of hazardous substances or petroleum products; however, the area has been used to store less than reportable quantities of hazardous substances (40 CFR 302.4) or 600 or fewer gallons of petroleum products.
2		Areas where only storage of hazardous substances in amounts exceeding their reportable quantity or petroleum products exceeding 600 gallons has occurred, but no release, disposal, or migration has occurred.
3		Concentrations do not require a removal or remedial action.
4		Removal or remedial actions have been taken.
5		Removal or remedial actions are underway, but all required actions have not yet been implemented.
6		Required removal or remedial actions have not yet been initiated.
7		Areas that are not evaluated or require additional evaluation.

Woodward-Clyde

Parcel Qualifiers

- Asbestos Containing Materials
- Lead Based Paint
- PCBs
- Radon
- Unexploded ordnance
- Radiological Sources

Woodward-Clyde

EBS METHODS

- Records Reviews
- Aerial Photograph Analysis
- Personnel Interviews
- Visual Inspections

Woodward-Clyde

Records Reviews

- Federal, State and Local Agencies
- Database Searches - Regulatory Base Search -
- Deed and Title Searches
- Installation Records and Environmental Reports - Reported Spills + Trends - Over 50 Environmental Reports

Woodward-Clyde

Aerial Photograph Analysis

- Purpose: to search for evidence of past activities
- Review of 1954, 1963, 1969, 1981 & 1988 aerial photographs
- Areas identified were already SWMUs (72)

Woodward-Clyde

Personnel Interviews

- Purpose: to obtain information about the Depot's environmental history
- Past and present employees contacted
- Consistent approach

Woodward-Clyde

Visual Inspections

- Purpose: to support the determination of the environmental condition
- Grounds, buildings, structures and equipment were inspected
- On-site and off-site inspections
- Consistent approach

Woodward-Clyde

What did we find?

- Investigated 17 "rumored" sites
- Seven of these were confirmed and will be considered as Areas of Concern
- Ten of these were determined to not be real problem areas

Woodward-Clyde

Conclusion

- Thorough investigation of all "rumored" sites
- Additional work will occur at confirmed sites
- All that can be reasonably done, has been done
- Your guarantee: the Army has stated that they will clean up any sites identified in the future that they were resposible for

Woodward-Clyde

PRESENTATION TO THE RESTORATION ADVISORY BOARD

AUGUST 20, 1996

PARSONS ENGINEERING SCIENCE, INC

PROPOSED REMEDIAL ACTION PLAN

FOR OPEN BURNING (OB) GROUNDS

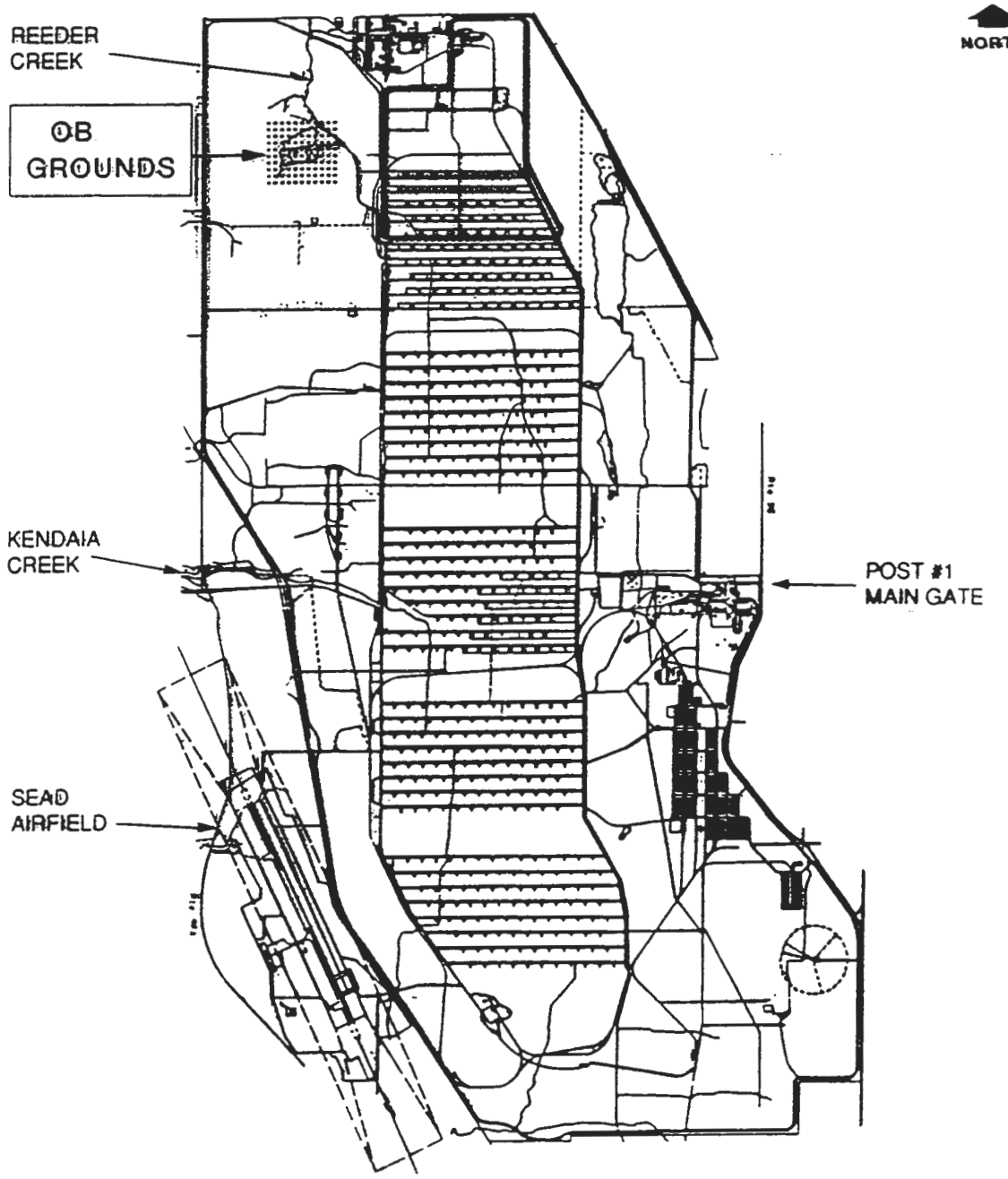
AT THE

SENECA ARMY DEPOT ACTIVITY

(SEDA)

PROPOSED REMEDIAL ACTION PLAN (PRAP)
OPEN BURNING GROUNDS

- ✓ Background of the OB Grounds
- ✓ Remedial Investigation (RI) Summary
- ✓ Remedial Action Objectives
- ✓ Remedial Alternatives
- ✓ Preferred Alternative



SOURCE: Seneca Army Depot

ES
ENGINEERING-SCIENCE, INC.

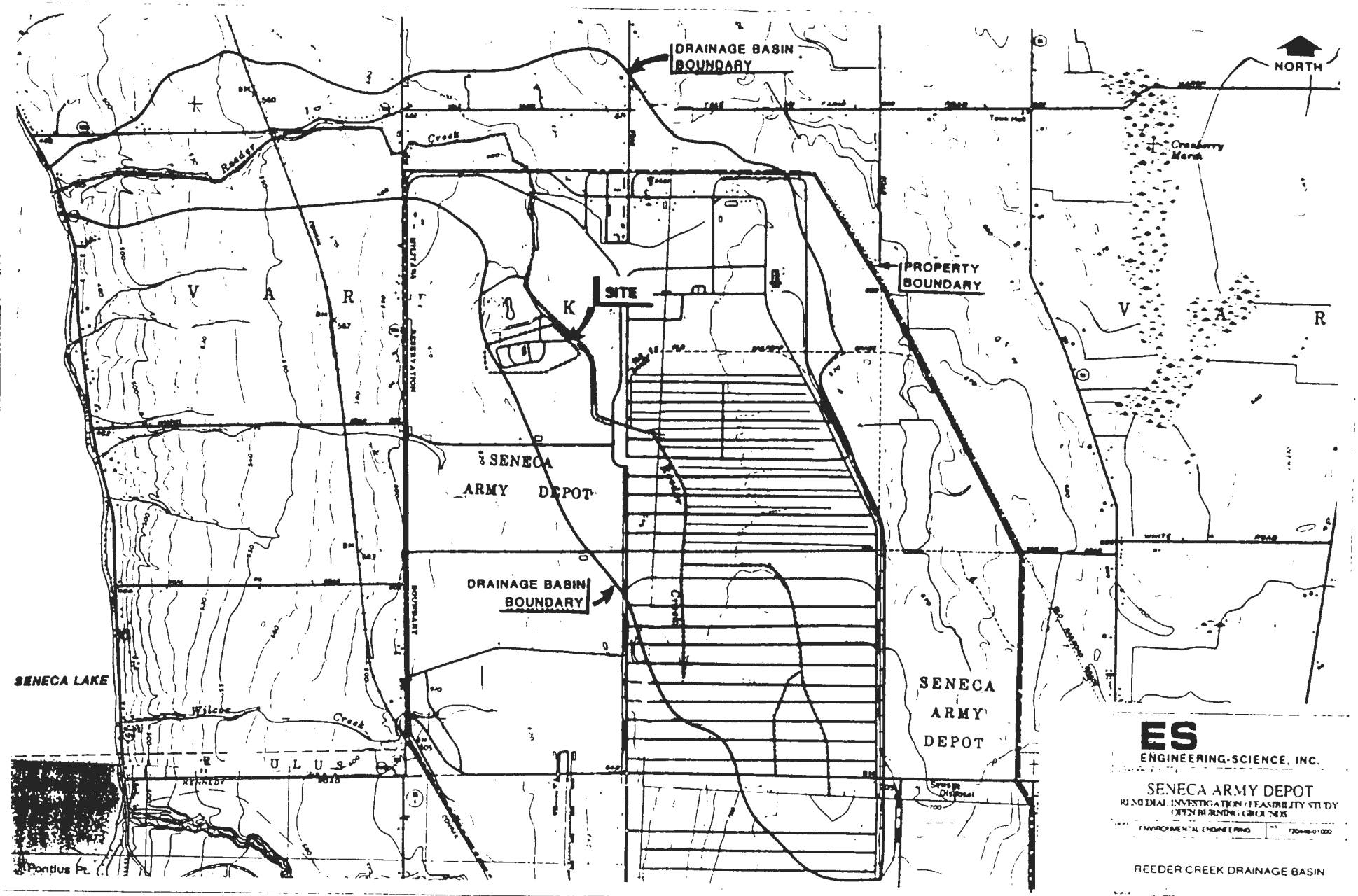
CLIENT/PROJECT TITLE

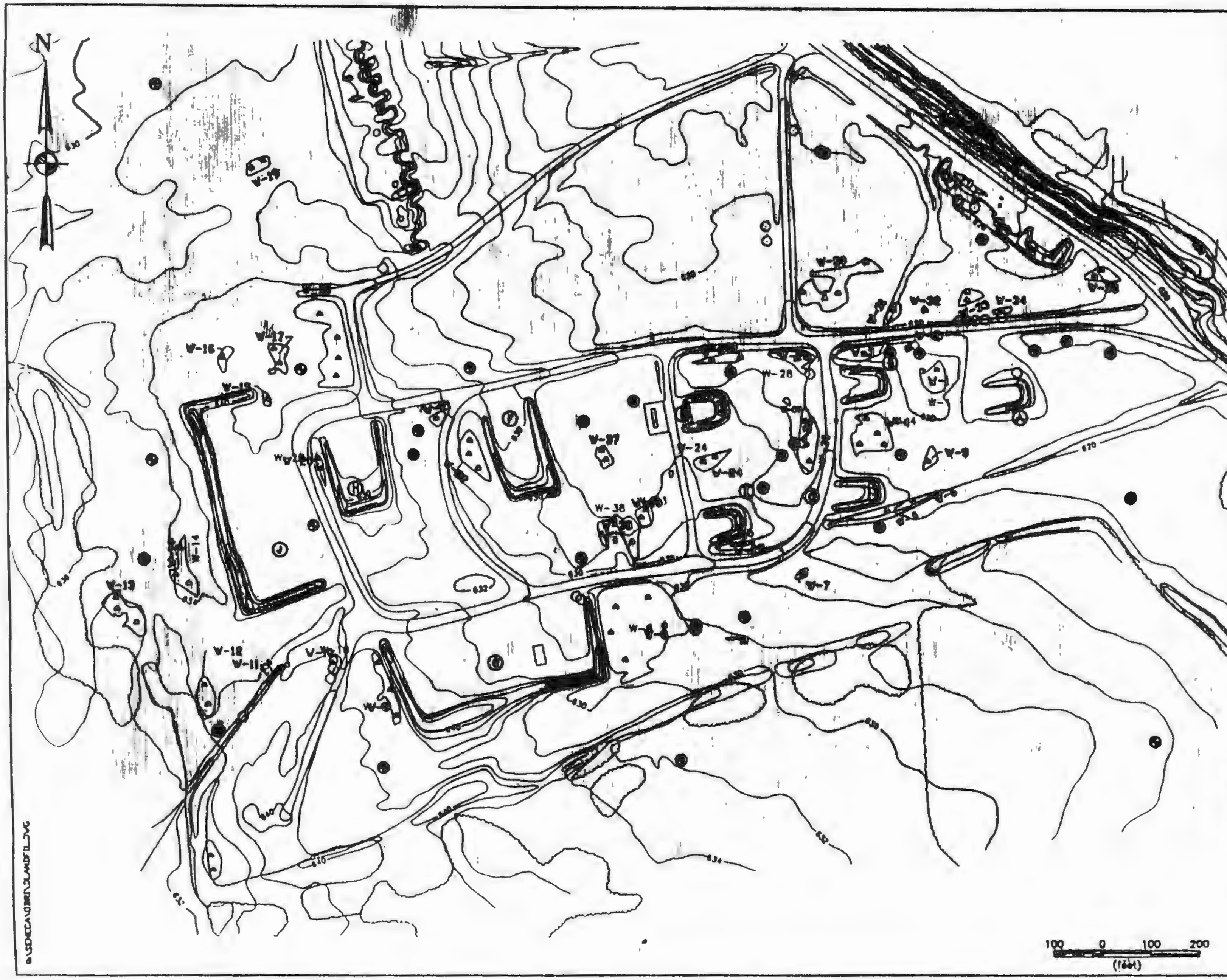
SENECA ARMY DEPOT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
OPEN BURNING GROUNDS

DEPT.	ENVIRONMENTAL ENGINEERING	WO	720446-01000

SENECA ARMY DEPOT MAP

SCALE 1" = 5000' (APPROXIMATE)


DRAINAGE BASIN BOUNDARY
NORTH
PROPERTY BOUNDARY
SITE
SENECA ARMY DEPOT
DRAINAGE BASIN BOUNDARY
SENECA LAKE
SENECA ARMY DEPOT
Pontius Pt.
ES
ENGINEERING-SCIENCE, INC.
SENECA ARMY DEPOT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
OPEN BURNING GROUNDS
REEDER CREEK DRAINAGE BASIN



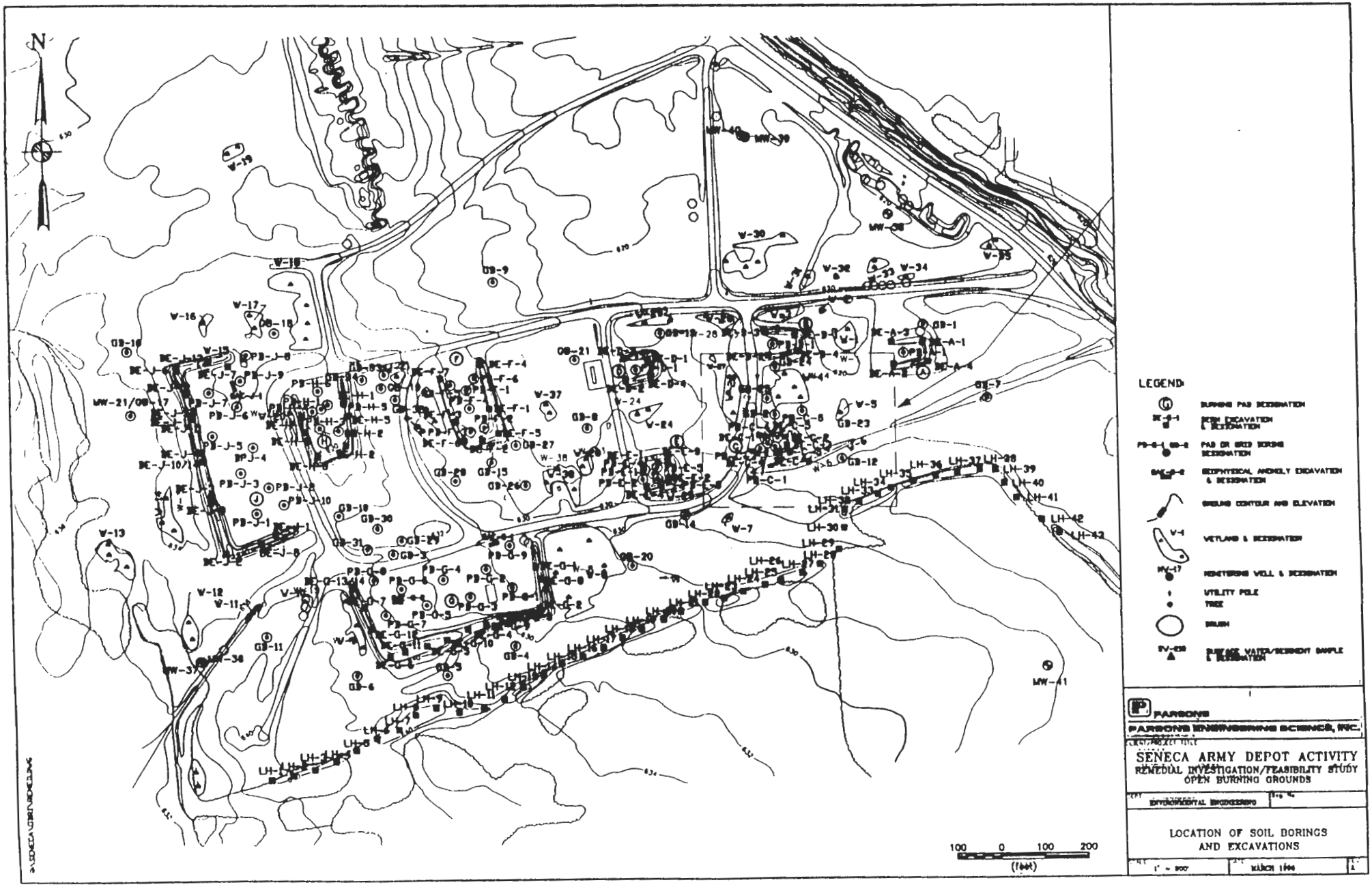
PARSONS ENGINEERING SCIENCE, INC.

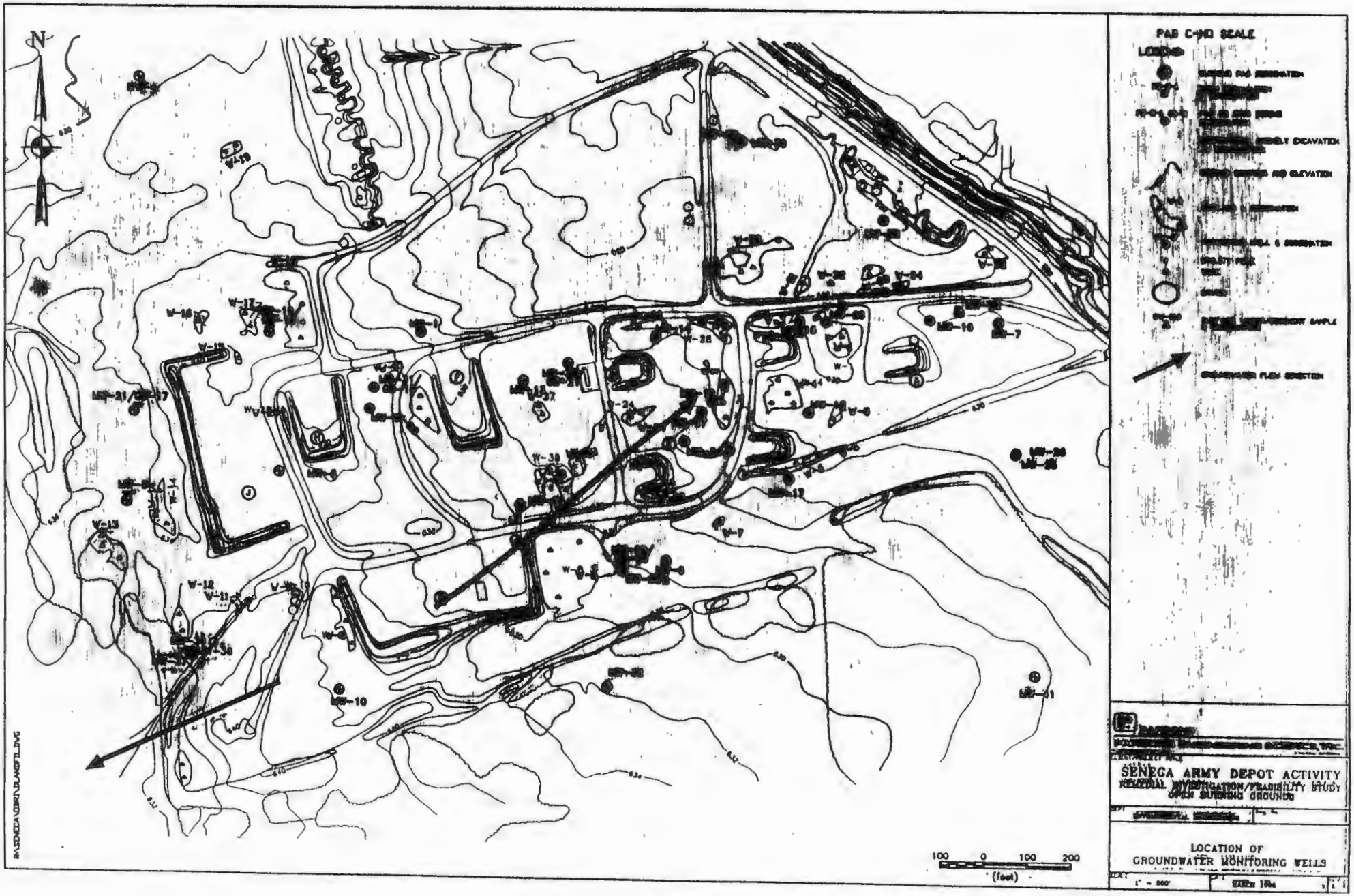
SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS

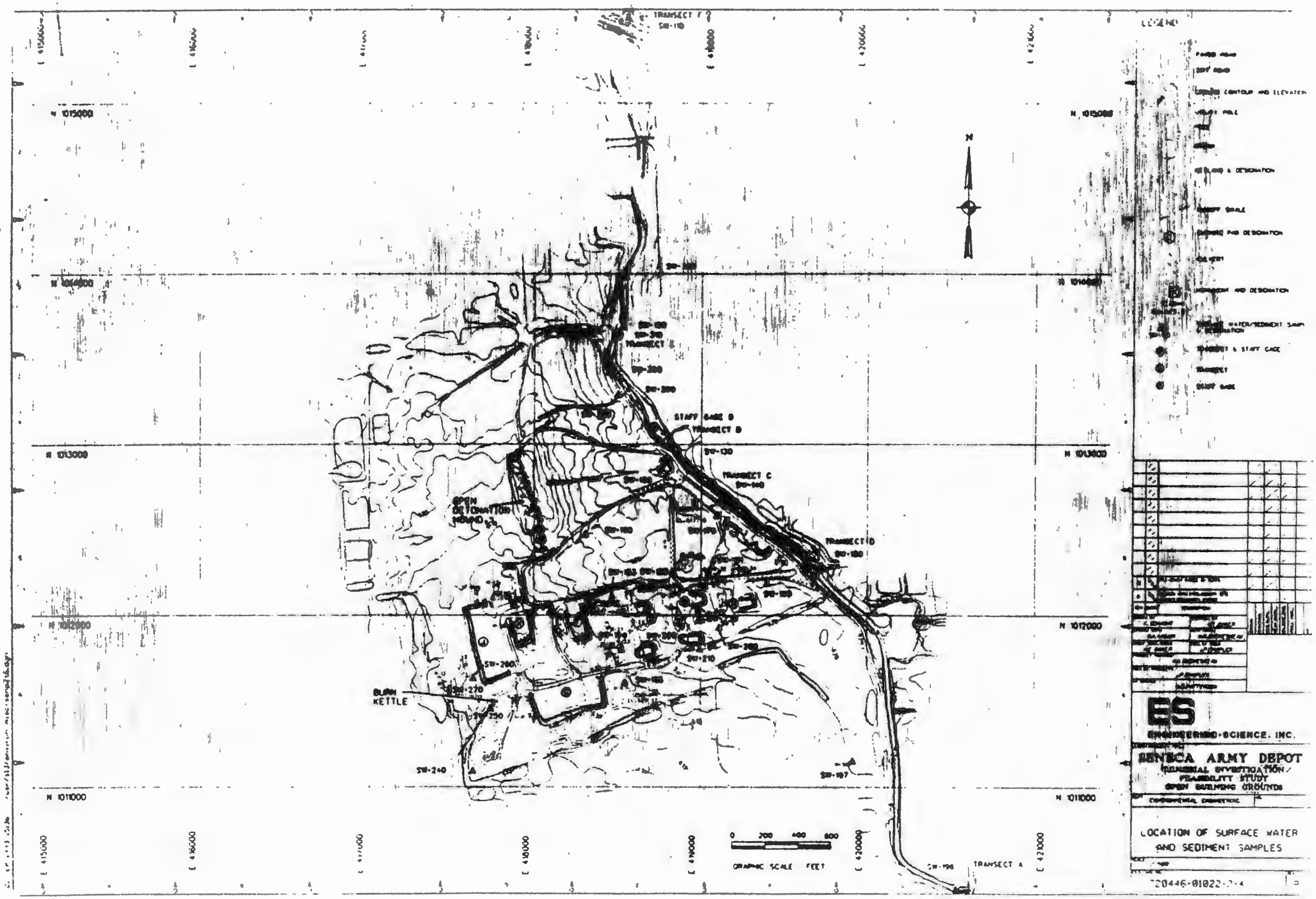
SITE PLAN

REMEDIAL INVESTIGATION FIELD TASKS

- 88 Soil Borings
  - 44 Grid Borings
  - 44 Pad Borings
- 106 Soil Excavations
  - 63 Berm Excavations
  - 43 Low Hill Excavations
- 22 Groundwater Monitoring Wells
  - 13 Groundwater Monitoring Wells Were Previously Installed
- 2 Rounds of Groundwater Sampling
- 29 Surface Water and Sediment Samples
- Ecological Survey
  - Aquatic Sampling in Reeder Creek
  - Terrestrial Study

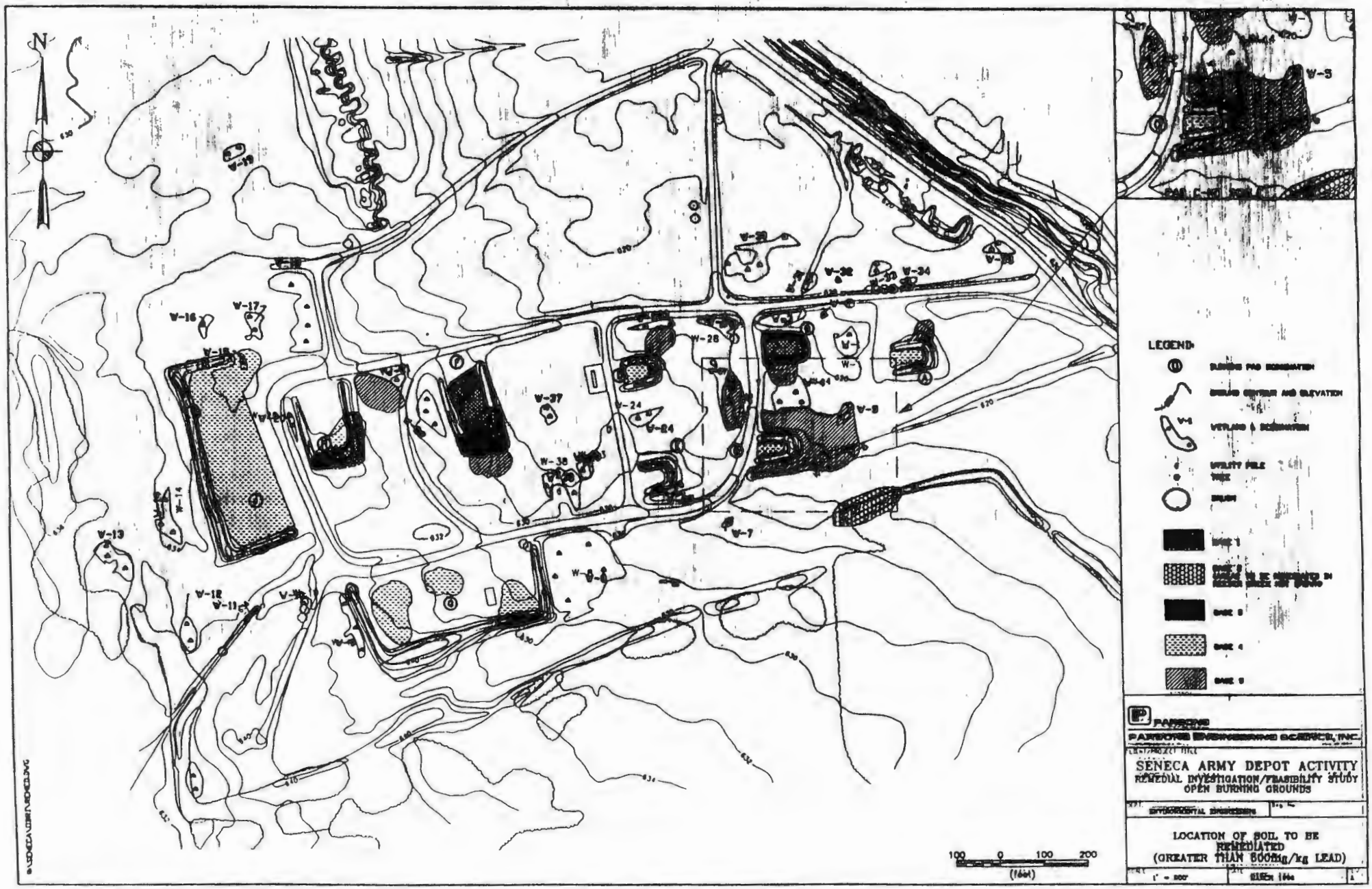

N
LEGEND
BURNING PAD DESIGNATION
TRENCH EXCAVATION & DESIGNATION
PAD OR GRID BORING DESIGNATION
GEOPHYSICAL ANOMALY EXCAVATION & DESIGNATION
GROUND CONTOUR AND ELEVATION
WETLAND & DESIGNATION
MONITORING WELL & DESIGNATION
UTILITY POLE
TREE
BRUSH
SURFACE WATER/SEDIMENT SAMPLE & DESIGNATION
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS
ENVIRONMENTAL ENGINEERS
LOCATION OF SOIL BORINGS AND EXCAVATIONS
1" = 200'
MARCH 1996
100 0 100 200
(FEET)


N
100 0 100 200
(feet)
SENECA ARMY DEPOT ACTIVITY
LOCATION OF
GROUNDWATER MONITORING WELLS


LEGEND
PAVED ROAD
SOFT ROAD
CONTOUR AND ELEVATION
BUILDING & DESIGNATION
GRAPHIC SCALE
DESIGNATION
WATER/SEDIMENT SAMPLE & DESIGNATION
TRANSECT & STAFF GAGE
TRANSECT
STAFF GAGE
TRANSECT F
SW-110
N 1015000
N 1014000
N 1013000
N 1012000
N 1011000
E 415000
E 416000
E 417000
E 418000
E 419000
E 420000
E 421000
SW-180
SW-310
TRANSECT E
SW-200
STAFF GAGE B
TRANSECT B
SW-130
TRANSECT C
SW-140
OPEN DETONATION MOUND
TRANSECT D
SW-180
SW-120
BURN KETTLE
SW-270
SW-260
SW-250
SW-240
SW-210
SW-197
SW-196
TRANSECT A
0 200 400 800
GRAPHIC SCALE FEET
ES
ENGINEERING-SCIENCE, INC.
SENECA ARMY DEPOT
REMEDIAL INVESTIGATION/ FEASIBILITY STUDY OPEN BURNING GROUNDS
LOCATION OF SURFACE WATER AND SEDIMENT SAMPLES
720446-01022-2-4

ANALYTES
OPEN BURNING GROUNDS

- ✓ Volatile Organic Compounds
- ✓ Semivolatile Organic Compounds
- ✓ Pesticides and PCBs
- ✓ Metals
- ✓ Explosives

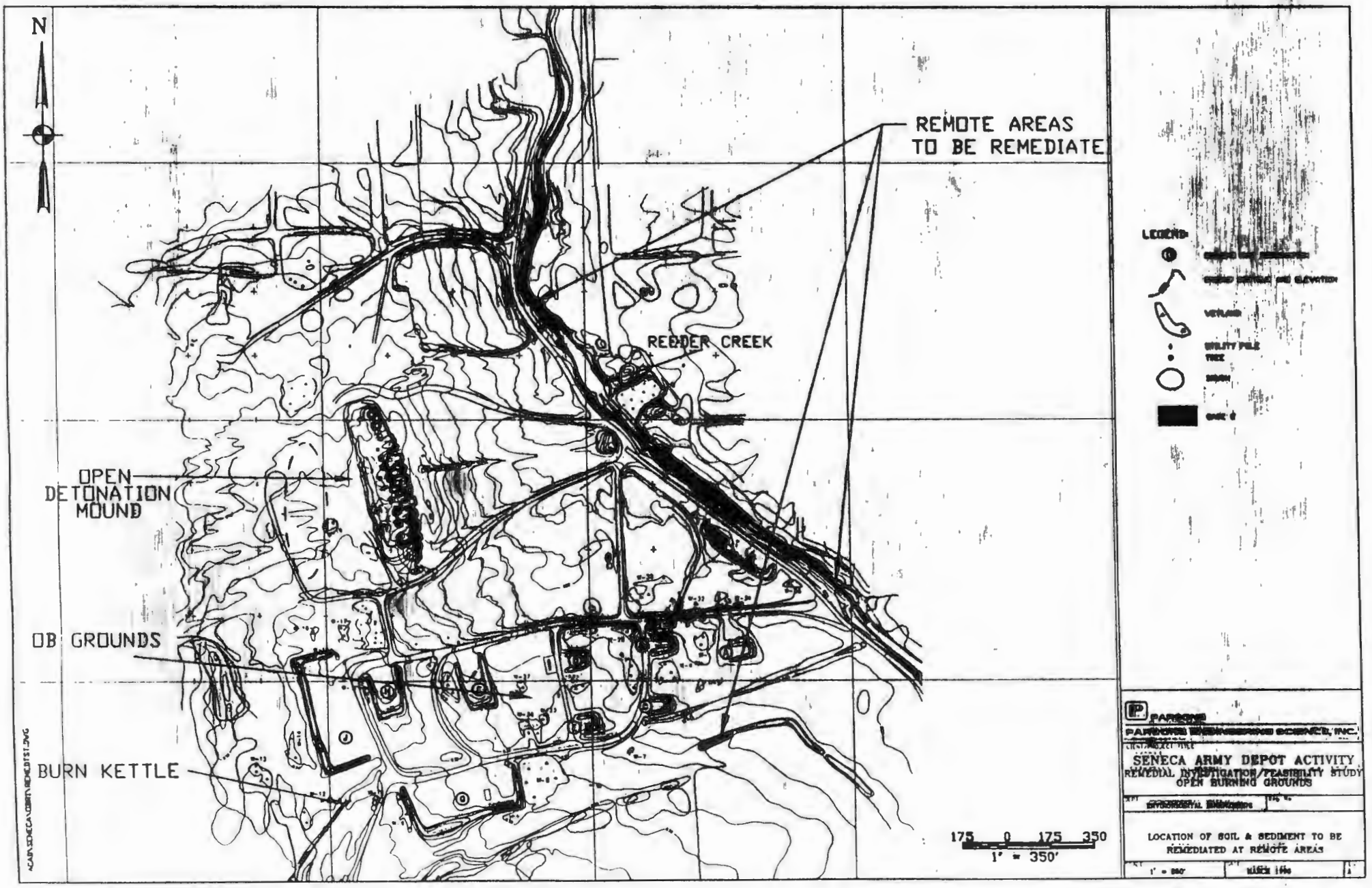

N
W-3
W-5
W-7
W-8
W-11
W-12
W-13
W-14
W-15
W-16
W-17
W-18
W-19
W-20
W-21
W-22
W-23
W-24
W-25
W-26
W-27
W-28
W-29
W-30
W-31
W-32
W-33
W-34
W-35
W-36
W-37
W-38
LEGEND
100 0 100 200
(feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS
ENVIRONMENTAL ENGINEERS
LOCATION OF SOIL TO BE
REMEDIATED
(GREATER THAN 500mg/kg LEAD)

REMEDIAL ACTION OBJECTIVES FOR OPEN BURNING GROUNDS

- ☑ 500 mg/Kg max. for Lead in Soils On-Site
- ☑ 16 mg/Kg max. for Copper in Sediments in Reeder Creek
- ☑ 31 mg/Kg max. for Lead in Sediments in Reeder Creek
- ☑ Prevent Surface Water Runoff
- ☑ Unexploded Ordnance Clearance, as Required
- ☑ Groundwater Monitoring
- ☑ Revegetate the Site
- ☑ Monitor Sediments in Reeder Creek

VOLUME OF SOIL TO BE REMEDIATED
OPEN BURNING GROUNDS

CASE	LOGIC	LOCATION	TOTAL VOLUME
Case 1	Soils exceeding TCLP limits	Pads B, F, H	3,746 c.y.
Case 2	Reeder Creek sediments Low Hill Soils	Reeder Creek Low Hill	896 c.y.
Case 3	All berms with concentrations of lead above 500 mg/kg	Pads A, C, D, E, G, J	3,825 c.y.
Case 4	All soils in pads with lead concentrations above 500 mg/kg	Pads A, C, D, G, J, H	7,107 c.y.
Case 5	All grid soils with lead concentrations above 500 mg/kg	Near Pads A, B, C, D, F, H	2,341 c.y.
CUMULATIVE TOTAL VOLUME			**17, 915 c.y.**


N
REMOTE AREAS
TO BE REMEDIATE
REDDER CREEK
OPEN
DETONATION
MOUND
OB GROUNDS
BURN KETTLE
175 0 175 350
1" = 350'
LEGEND
PARSONS
SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS
LOCATION OF SOIL & SEDIMENT TO BE
REMEDIATED AT REMOTE AREAS

REMEDIAL ALTERNATIVES FOR THE OPEN BURNING GROUNDS

- ✓ **ALTERNATIVE 1: No Action**
- ✓ **ALTERNATIVE 4: Off-Site Disposal**
- ✓ **ALTERNATIVE 5: On-Site Disposal**
- ✓ **ALTERNATIVE 6: Soil Washing**

CRITERIA FOR EVALUATING REMEDIAL ALTERNATIVES

- ✓ Overall Projection of Human Health and the Environment
- ✓ Compliance with Applicable or Relevant and Appropriate requirements (ARARs)
- ✓ Long-Term Effectiveness and Permanence
- ✓ Reduction of Toxicity, Mobility, or Volume through Treatment
- ✓ Short-Term Effectiveness
- ✓ Implementability
- ✓ Cost

COST ESTIMATES FOR ALTERNATIVES FOR OPEN BURNING GROUNDS SENECA ARMY DEPOT ACTIVITY

Alternative	Present Worth Cost	Capital Cost	O&M Costs
4	(in millions) $2.9 to $4.5	(in millions) $2.4 to $4.0	$45,300
5	$4.5	$4.0	$49,100
6	$9.9	$9.4	$45,300

PREFERRED ALTERNATIVE: ALTERNATIVE 4 - OFF-SITE DISPOSAL

- ✓ Disposal of all Excavated Soils in an Off-Site Subtitle D Landfill
- ✓ Treatment of Soils with TCLP Exceedences by Solidification/Stabilization
- ✓ Construction Time:
  - Treatability Testing for Solidification/Stabilization: 2 to 3 months
  - Remediation: 1 to 2 months
- ✓ Present Worth Cost: $2.9 to $4.5 million

Restoration Advisory Board Meeting
Agenda

September 17, 1996

7:00	**Welcome** LTC Stephen W. Brooks Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
7:15	**Fire Training Areas Remedial Investigation Status** Mr. Michael Duchesneau Parsons Engineering Science, Inc.
7:45	**Break**
8:00	**Risk Assessment for Environmental Sites** Mr. Keith Hoddinott U.S. Army Center for Health Promotion and Preventive Medicine
8:30	**Open Discussion**
9:00	**Adjourn**

MINUTES
RESTORATION ADVISORY BOARD
SEPTEMBER 17, 1996 MEETING MINUTES

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Carla Struble, U.S. Environmental Protection Agency
Kamal Gupta, NYS Department of Environmental Conservation
Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Dick Durst/Community Co-Chair, Anne Herman, David Wagner,
Brian Dombrowski, Richard Sisson, Al Legasse, Lucinda Sangree,
Mary Ann Krupsak, Russell Miller, Estelle Coleman, Frank Ives

Community RAB Member Not Present:

Henry Van Ness, Richard Lewis, Diane DeMuth, Carmen Serrett

Government and Technical Support Personnel Present:

Jerry Whitaker, SEDA Base Transition Coordinator
Beverly Lombardo, SEDA Public Affairs Officer
Susan Cooper, SEDA Secretary
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Mike Duchesneau, Parsons Engineering Science, Inc.
Keith Hoddinott, U.S. Army Environmental Center for Health Promotion and Preventive Medicine
Jim Ridenour, NYS Department of Health
Robert Scott, NYS Department of Environmental Conservation
Mark Maddaloni, U.S. Environmental Protection Agency, Region II
Bruce Nelson, Malcolm Pirnie
Kevin Healy, U.S. Army Corps of Engineers, Huntsville District

Others Present (from sign-in sheet):

Joanne Howard, Community Member
Nellie Legasse, Community Member
Karl Bechler, Community Member
Patricia Jones, LRA

2. Stephen Absolom welcomed members and support staff to the September Restoration Advisory Board in the NCO Club, delivered opening remarks, outlined the evening's agenda, and asked for introductions.

3. Minutes from the June and August RAB meetings were then approved, signed, and accepted into record. The June minutes required a change to show Lucinda Sangree present.

4. Mike Duchesneau gave a presentation on the Fire Training Areas Remedial Investigation Status. The presentation covered the Fire Demonstration Pad used by firefighters to demonstrate their proficiency in fighting fires. Compounds were found to exceed EPA ranges in soil and groundwater at this site. The Fire Training Area was also explained as an area where firefighters practiced their skills in a variety of situations. Compounds detected there also exceeded EPA ranges in soils and subsurface soils. Possible remedial action alternatives were identified for soil and groundwater. Questions fielded during the presentation follow:

a. An inquiry was made as to whether compounds used for firefighting could be contributing to the contamination. Response was that it was possible, but there is little info on what was used at the site.

b. A question on how the site was constructed was asked. This response was in conjunction with the discussion of why the groundwater was mounding at the site.

c. A discussion took place on the reuse scenario and the impact on remediation efforts if the reuse was a continuation of the area for fire training. The discussion indicated some remediation may be required for hot spot removal, but that would have to be determined. It was stated that any new activity would be required to be performed in an environmentally friendly procedure that would involve some construction which might also require some remediation effort.

5. Keith Hoddinott then briefed the RAB on Risk Assessment for Environmental Sites. What was normally a 5-day class was successfully compressed into a 30-minute presentation to include objectives, Superfund Remediation Process, and Risk Assessment Process. Assessing risks in humans entailed data collection and evaluation, exposure assessment, toxicity assessment, and risk characterization. The following additional issues were discussed regarding this process:

a. When determining toxicity, the significance of 1 in 10,000 is a common number used. Assumptions used in risk assessments are widely accepted throughout the U.S., but not by the World Health Association.

b. A residential scenario was provided to lend perspective to the risk assessment process.

6. General discussion enumerated several topics for future meetings:

a. Ecological risk assessment as opposed to human risk assessment as was discussed during this meeting.

b. Feasibility Study process.

c. Treatment processes for remediation.

d. Radiological contamination--it's impact, extent, future impact, and findings.

e. A presentation by the Local Redevelopment Authority (LRA) to include future uses of the depot as well as the correlation between the RAB and LRA's activities and their impacts.

f. Records of Decision.

g. National Environmental Policy Act (NEPA) and Environmental Impact Statement.

7. The next Restoration Advisory Board meeting will be held on October 15, 1996 at 7:00 p.m. at the SEDA NCO Club.

8. The meeting was adjourned at 9:25 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

Presentation to the Restoration Advisory Board (RAB)

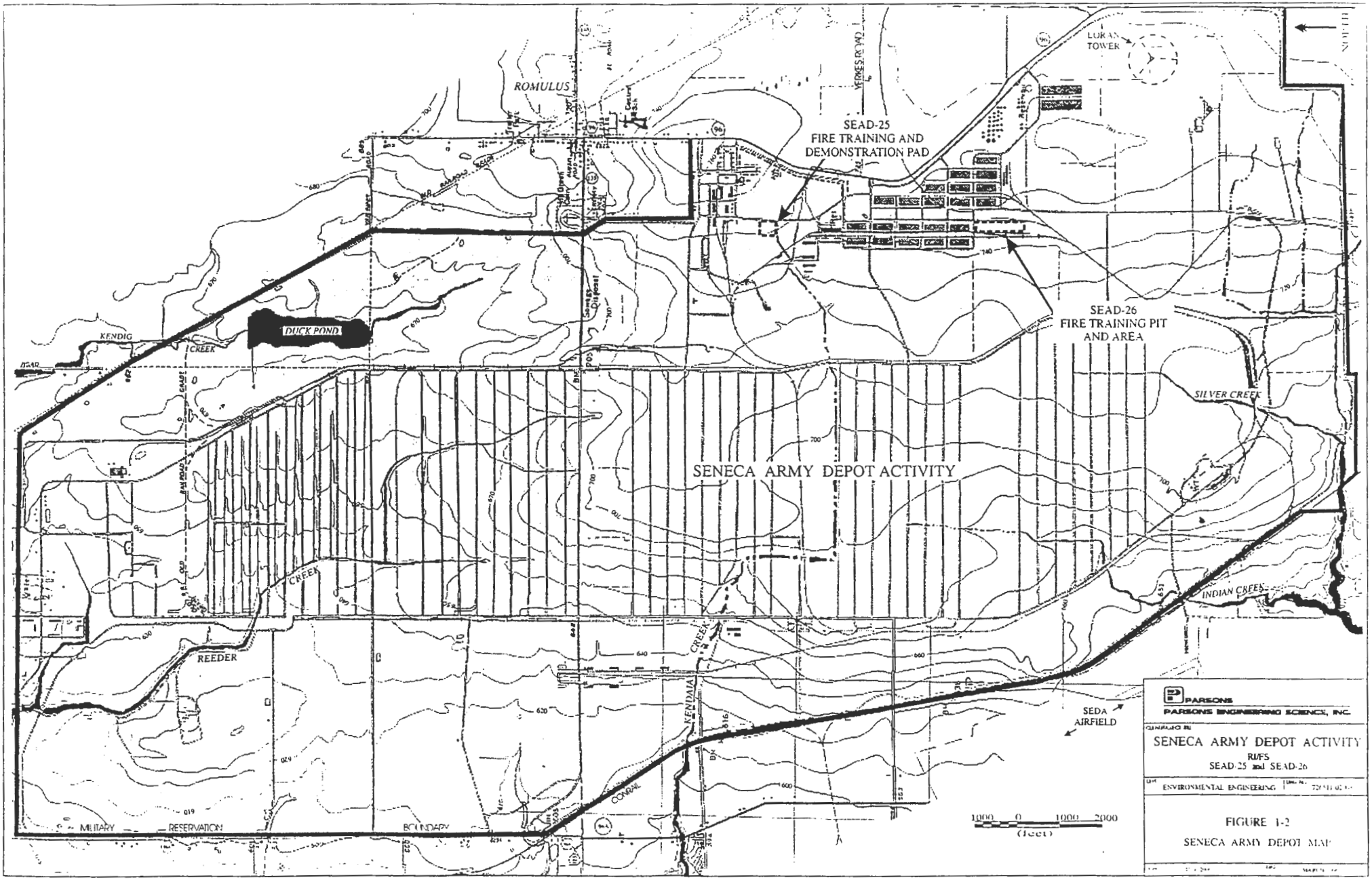
September 17, 1996

REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) STATUS REPORT

PARSONS ENGINEERING SCIENCE

Summary of Activities at SEAD-25(The Fire Demonstration Pad) and SEAD-26 (The Fire Training Area)

- Remedial Investigation
  - Fieldwork Completed in December, 1995
  - Second Round of GW Sampling Completed in April, 1996
- Pre-Draft Report Submitted to the Army in April, 1996
- Draft Report Submitted to Regulators on June 27, 1996



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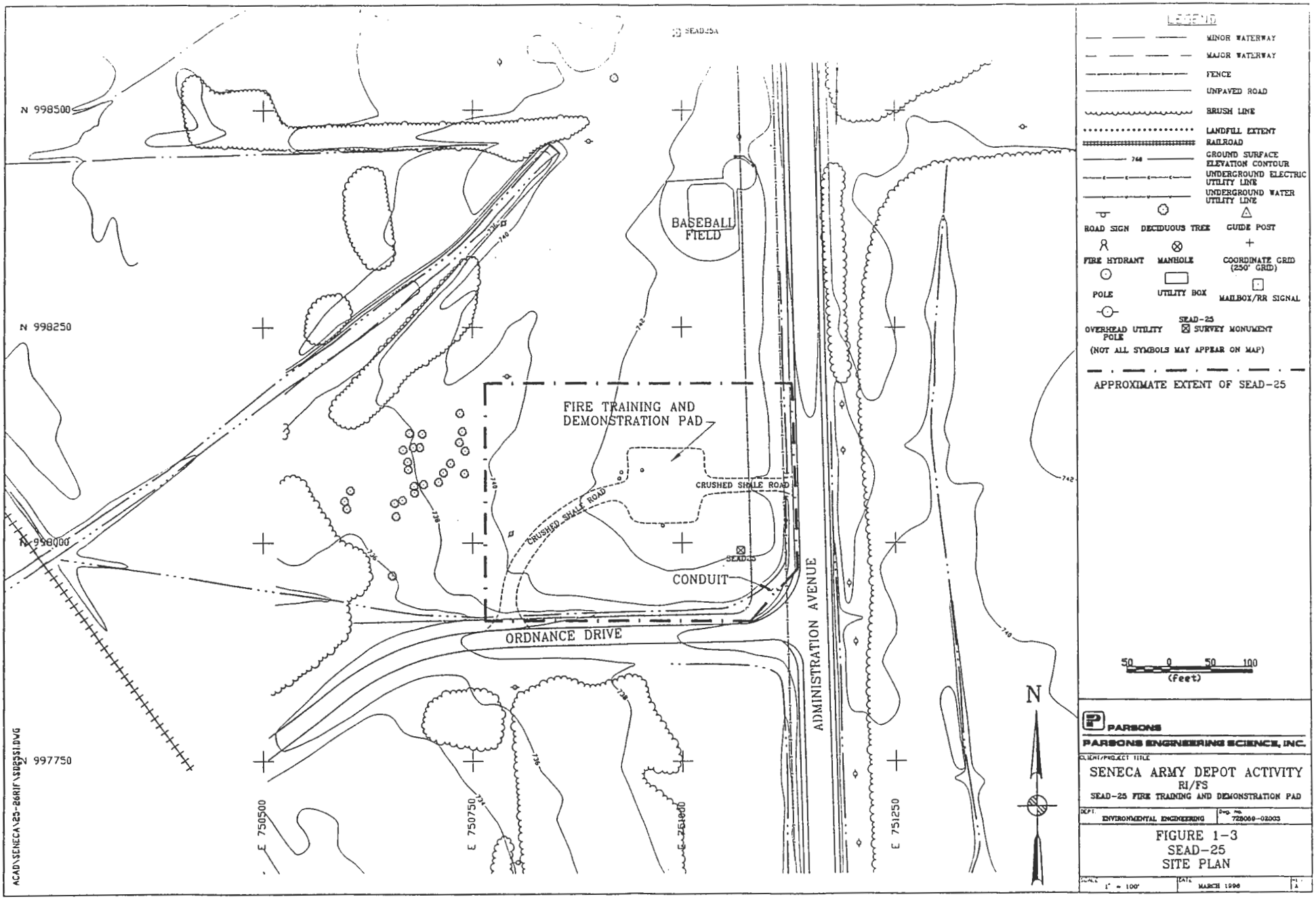
Summary of Remedial Investigation (RI) at SEAD-25

- Volatile Aromatic Compounds Detected in Soil and Groundwater
- Volatile Chlorinated Organics Detected in Soil and Groundwater
- Groundwater Plume Limited to Site Boundaries
- Risk Exceeds EPA Target Ranges for Residential Exposure



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PARSONS ENGINEERING SCIENCE, INC.

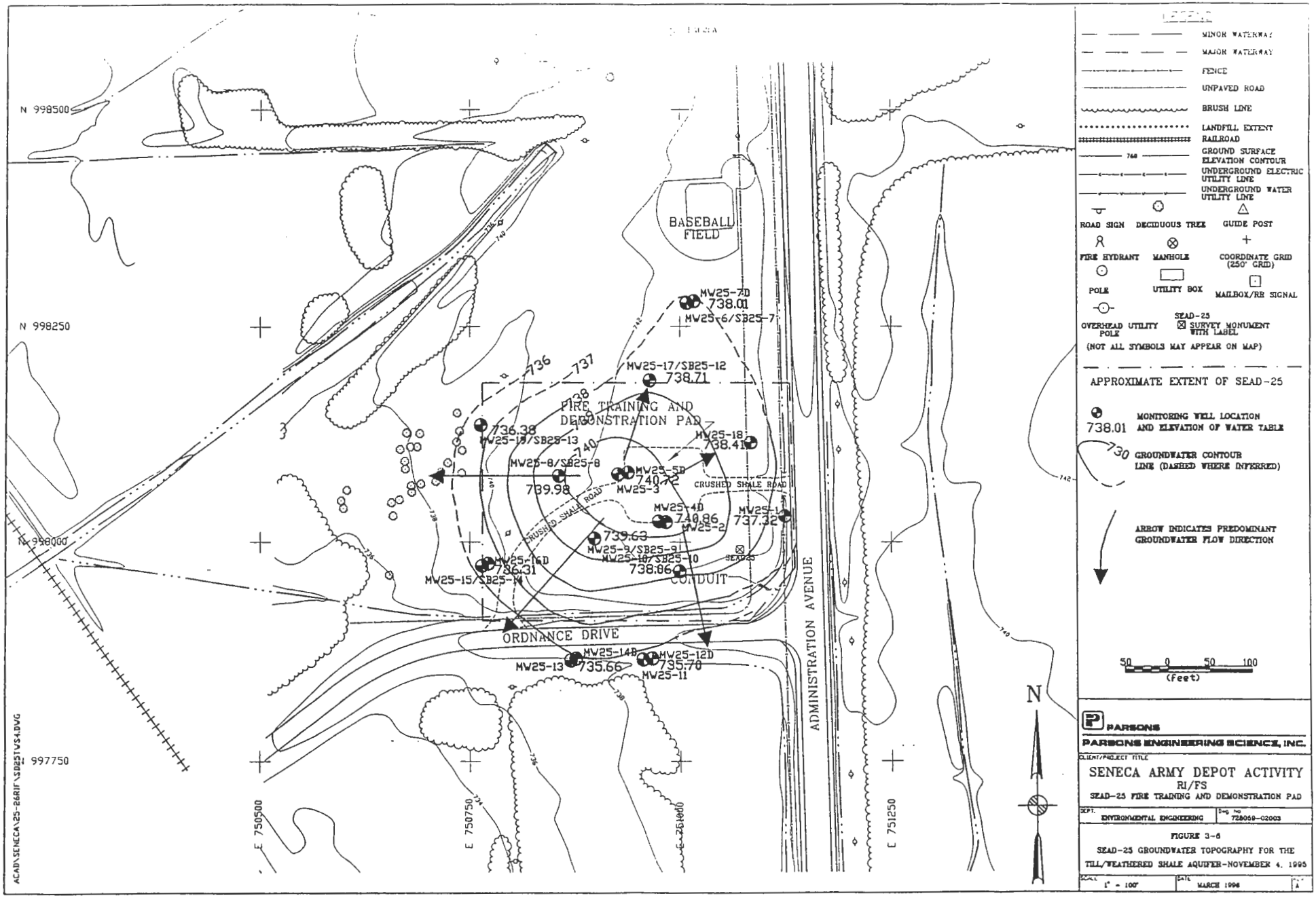
CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD

DEPT.	Proj. No.
ENVIRONMENTAL ENGINEERING	728060-02003

FIGURE 1-3
SEAD-25
SITE PLAN

SCALE	DATE	FILE
1" = 100'	MARCH 1996	



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PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

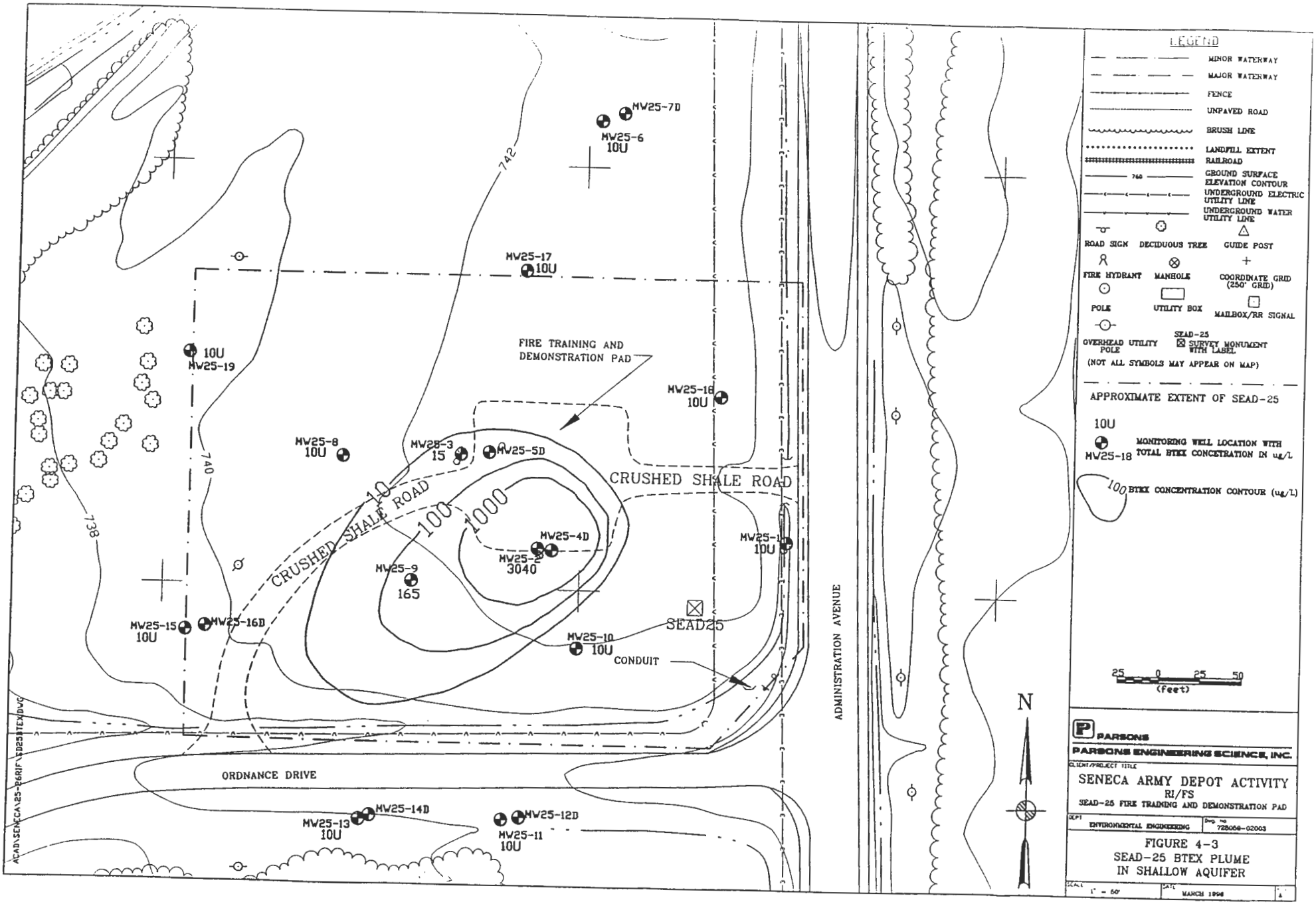
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD

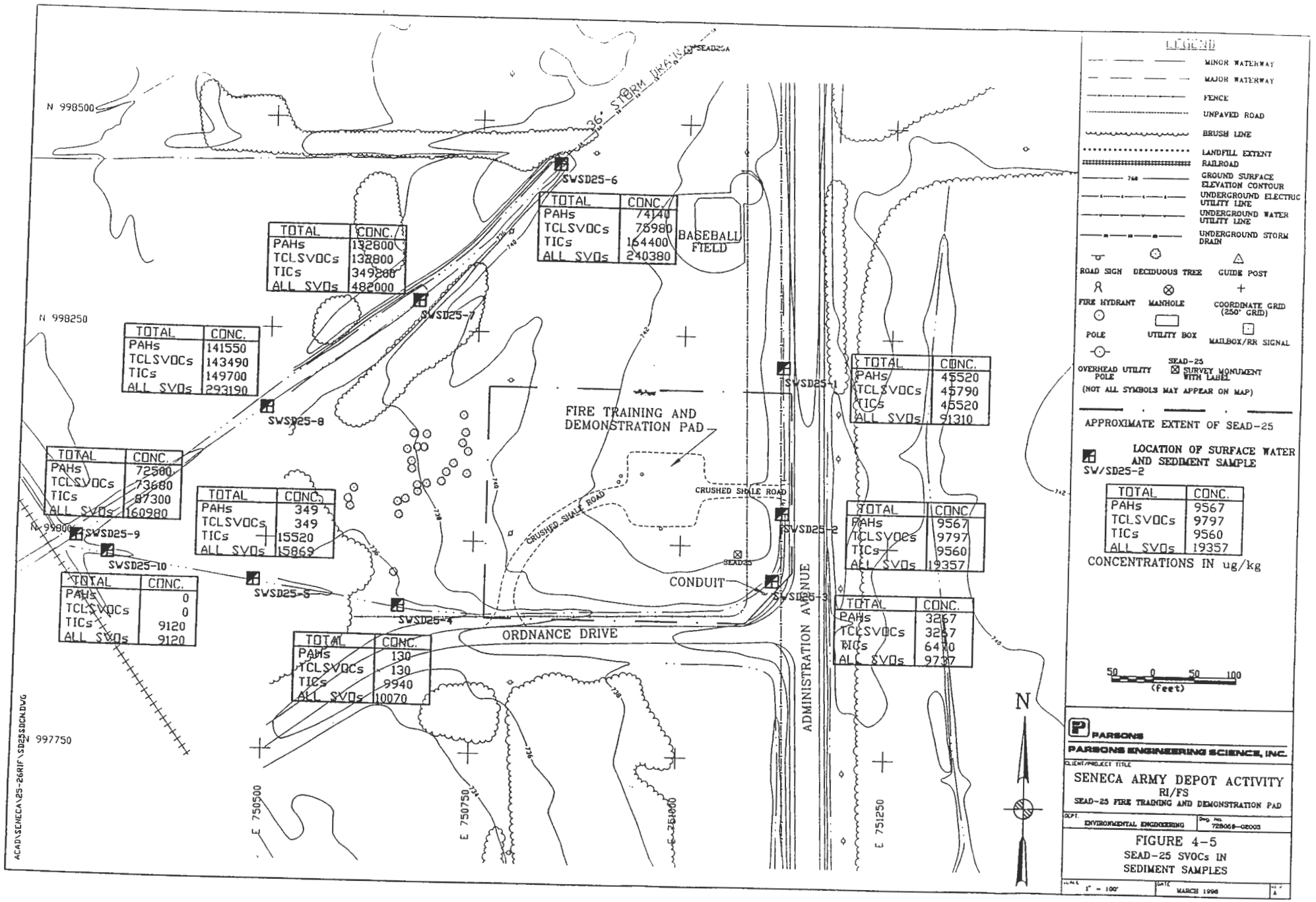
DEPT.	Dwg No
ENVIRONMENTAL ENGINEERING	728059-02003

FIGURE 3-6

SEAD-25 GROUNDWATER TOPOGRAPHY FOR THE TILL/WEATHERED SHALE AQUIFER-NOVEMBER 4, 1995

SCALE	DATE	
1" = 100'	MARCH 1996	A


MW25-7D
MW25-6
10U
742
MW25-17
10U
FIRE TRAINING AND
DEMONSTRATION PAD
10U
MW25-19
MW25-18
10U
MW25-8
10U
MW25-3
15
MW25-5D
740
CRUSHED SHALE ROAD
10
100
1000
CRUSHED SHALE ROAD
738
MW25-4D
MW25-2
3040
MW25-1
10U
MW25-9
165
MW25-15
10U
MW25-16D
SEAD25
MW25-10
10U
CONDUIT
ADMINISTRATION AVENUE
ORDNANCE DRIVE
MW25-13
10U
MW25-14D
MW25-12D
MW25-11
10U
N
LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
760
GROUND SURFACE ELEVATION CONTOUR
UNDERGROUND ELECTRIC UTILITY LINE
UNDERGROUND WATER UTILITY LINE
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/RR SIGNAL
OVERHEAD UTILITY POLE
SEAD-25
SURVEY MONUMENT WITH LABEL
(NOT ALL SYMBOLS MAY APPEAR ON MAP)
APPROXIMATE EXTENT OF SEAD-25
10U
MW25-18
MONITORING WELL LOCATION WITH TOTAL BTEX CONCETRATION IN ug/L
100
BTEX CONCENTRATION CONTOUR (ug/L)
25 0 25 50
(Feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD
DEPT
ENVIRONMENTAL ENGINEERING
DWG No
728066-02003
FIGURE 4-3
SEAD-25 BTEX PLUME
IN SHALLOW AQUIFER
SCALE
1" = 50'
DATE
MARCH 1998
ACAD\SENECA\25-R6RIFS\SD25BTEX.DWG



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

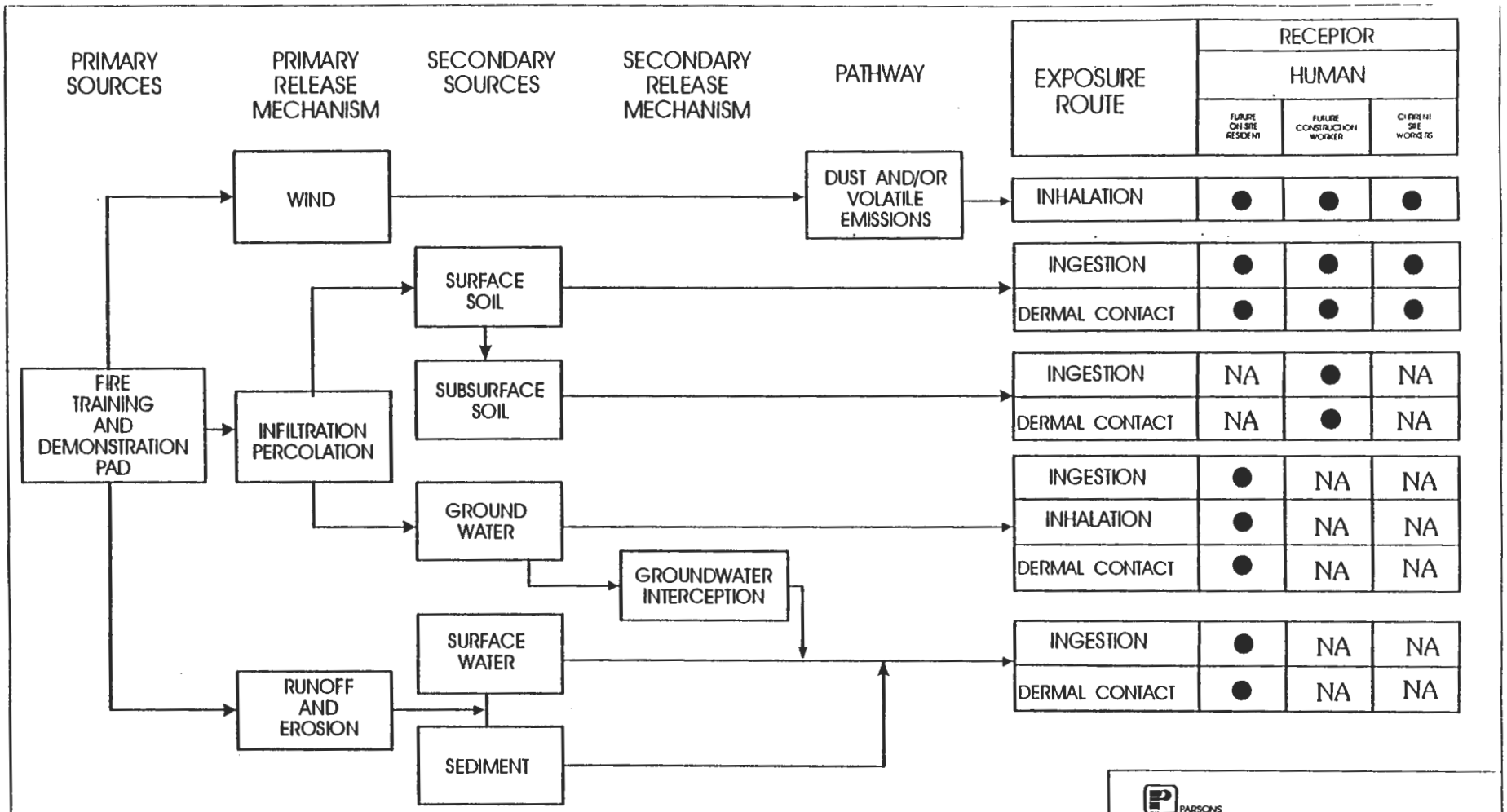
CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-25 FIRE TRAINING AND DEMONSTRATION PAD

DEPT. ENVIRONMENTAL ENGINEERING | Dwg. No. 728069-02003

FIGURE 4-5
SEAD-25 SVOCs IN SEDIMENT SAMPLES

SCALE 1" = 100' | DATE MARCH 1998 | SHT. # A



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY

RISK ASSESSMENT EXPOSURE PATHWAYS

SEAD-25 FIRE TRAINING AND DEMONSTRATION AREA

DEPT ENVIRONMENTAL ENGINEERING | DWG NO 728059 02002

FIGURE 6-11

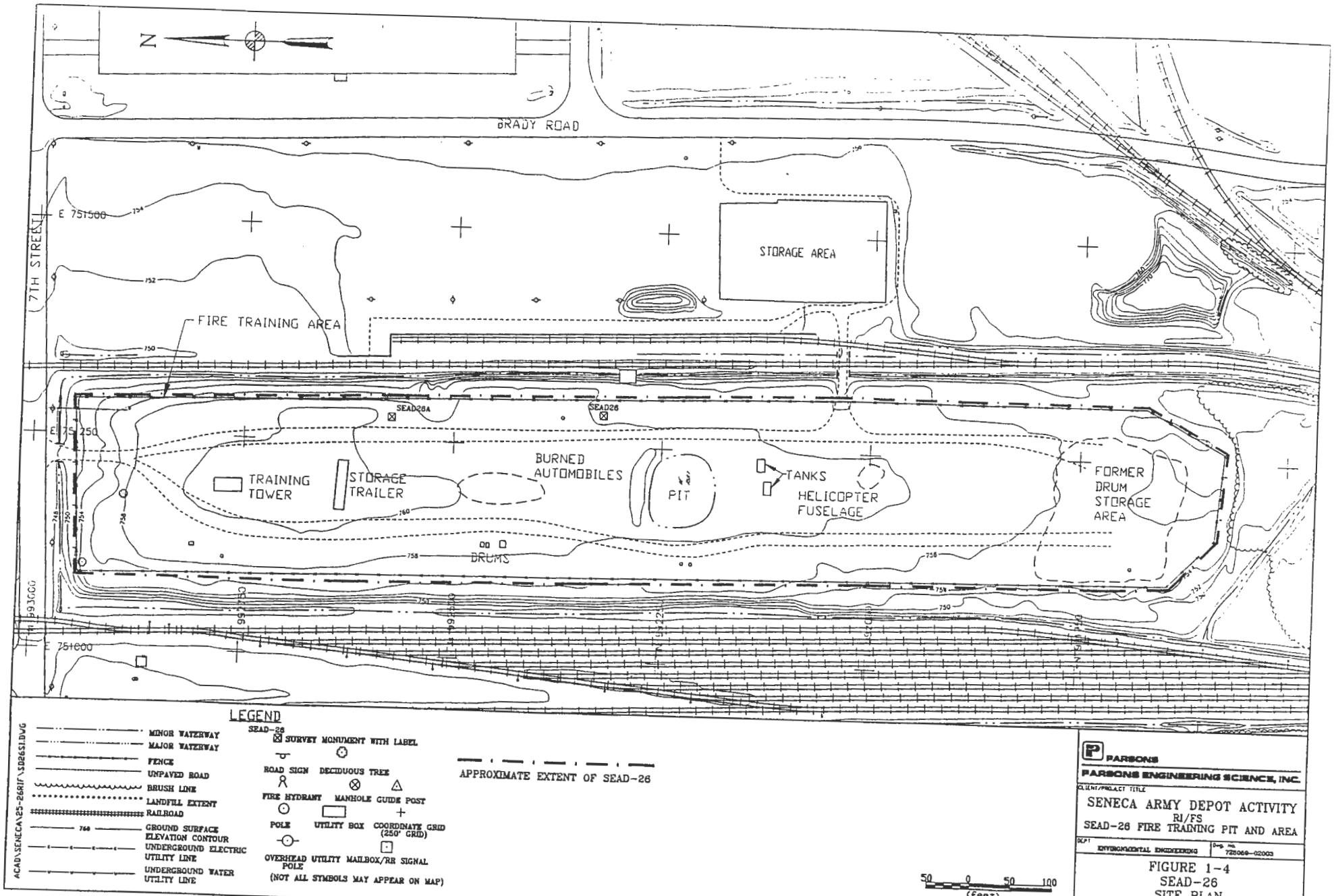
EXPOSURE PATHWAY SUMMARY

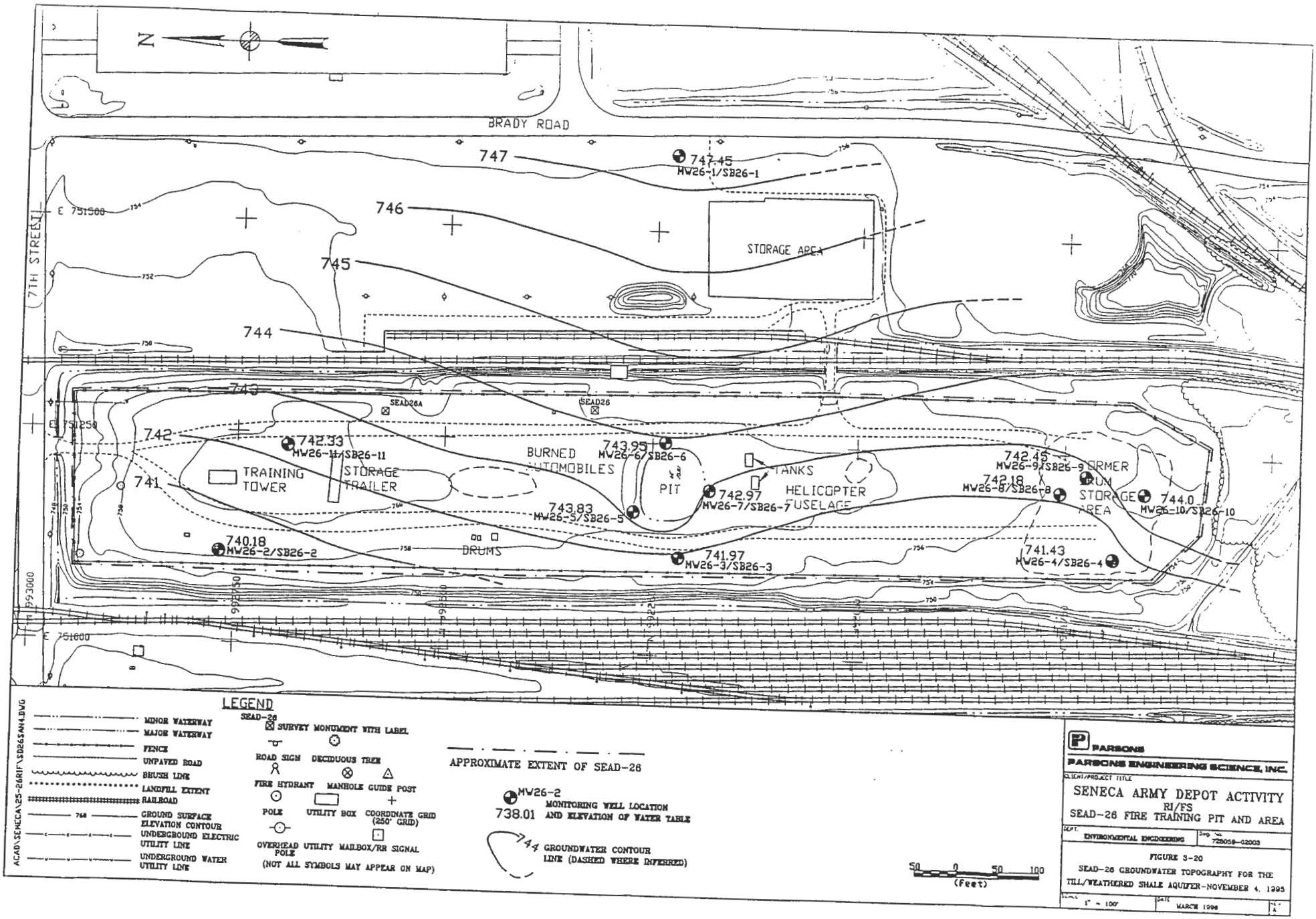
SCALE NA | DATE MAY 1996

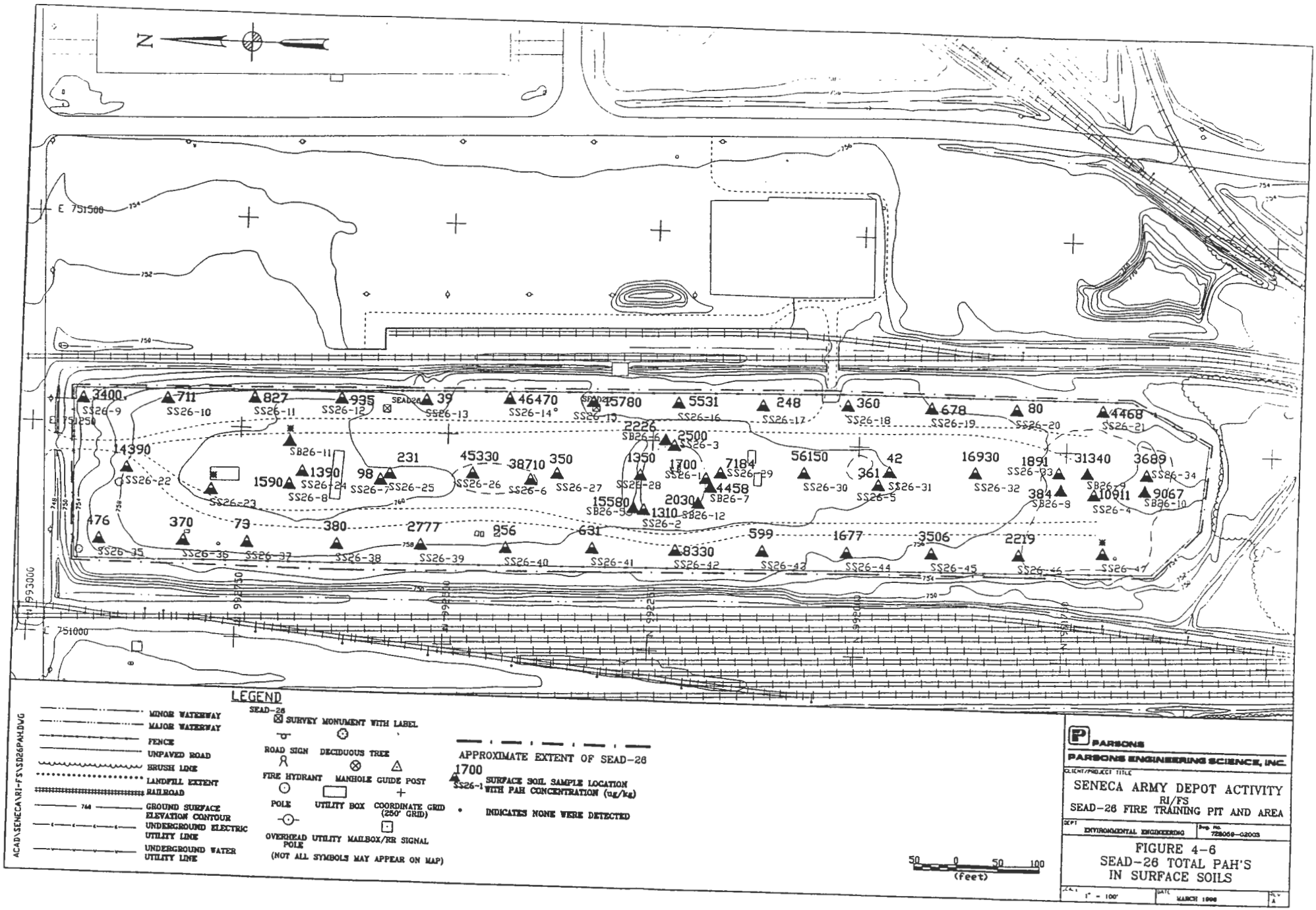
H:\ENG\SENECA\a2526\Figures\25EXP.CDR

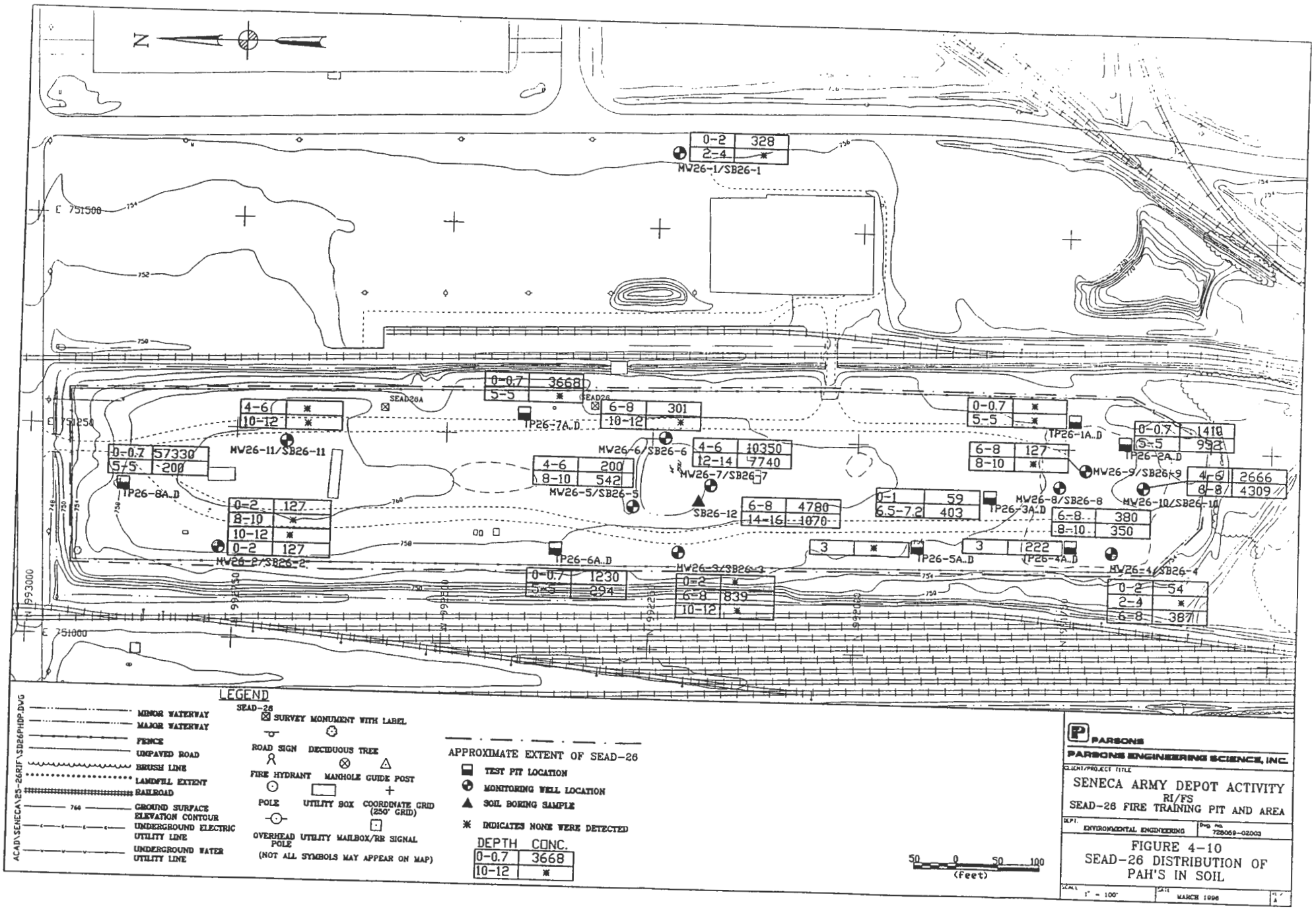
Summary of Remedial Investigation (RI) at SEAD-26

- Semi Volatile Organic Compounds (SVOC) Detected in Surface and Subsurface Soils
- Highest Concentrations Detected in Surface Soils Around Fire Training Pit
- Low Conc. of Aromatic Compounds Detected in One Well, MW-26-7, Located Near the Pit
- Risk Exceeds EPA Target Range for Residential Exposure


N
BRADY ROAD
7TH STREET
E 751500
E 751250
E 751000
STORAGE AREA
FIRE TRAINING AREA
SEAD26A
SEAD26
TRAINING TOWER
STORAGE TRAILER
BURNED AUTOMOBILES
PIT
TANKS
HELICOPTER FUSELAGE
FORMER DRUM STORAGE AREA
DRUMS
LEGEND
SEAD-26
SURVEY MONUMENT WITH LABEL
ROAD SIGN
DECIDUOUS TREE
FIRE HYDRANT
MANHOLE
GUIDE POST
POLE
UTILITY BOX
COORDINATE GRID (250' GRID)
OVERHEAD UTILITY POLE
MAILBOX/RR SIGNAL
(NOT ALL SYMBOLS MAY APPEAR ON MAP)
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
UNDERGROUND ELECTRIC UTILITY LINE
UNDERGROUND WATER UTILITY LINE
APPROXIMATE EXTENT OF SEAD-26
50 0 50 100
(Feet)
ACAD\SENECA\25-26RIF\SD26S1.DWG
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-26 FIRE TRAINING PIT AND AREA
DEPT
ENVIRONMENTAL ENGINEERING
Proj. no.
725060-02003
FIGURE 1-4
SEAD-26
SITE PLAN
Scale
1" = 100'
Date
MARCH 1996


N
BRADY ROAD
7TH STREET
E 751500
E 751250
E 751000
N 893000
747
746
745
744
743
742
741
747.45
MW26-1/SB26-1
STORAGE AREA
SEAD26A
SEAD26
742.33
MW26-11/SB26-11
TRAINING TOWER
STORAGE TRAILER
BURNED AUTOMOBILES
743.95
MW26-6/SB26-6
PIT
TANKS
HELICOPTER FUSELAGE
742.97
MW26-7/SB26-7
743.83
MW26-5/SB26-5
742.45
MW26-9/SB26-9
742.18
MW26-8/SB26-8
SRMER RUM STORAGE AREA
744.0
MW26-10/SB26-10
740.18
MW26-2/SB26-2
DRUMS
741.97
MW26-3/SB26-3
741.43
MW26-4/SB26-4
LEGEND
SEAD-26
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
UNDERGROUND ELECTRIC UTILITY LINE
UNDERGROUND WATER UTILITY LINE
SURVEY MONUMENT WITH LABEL
ROAD SIGN
DECIDUOUS TREE
FIRE HYDRANT
MANHOLE
GUIDE POST
POLE
UTILITY BOX
COORDINATE GRID (250' GRID)
OVERHEAD UTILITY POLE
MAILBOX/RR SIGNAL
(NOT ALL SYMBOLS MAY APPEAR ON MAP)
APPROXIMATE EXTENT OF SEAD-26
MW26-2
738.01
MONITORING WELL LOCATION AND ELEVATION OF WATER TABLE
744
GROUNDWATER CONTOUR LINE (DASHED WHERE INFERRED)
50 0 50 100
(Feet)
ACAD\SENECA\25-26RIF\SD26SAM4.DWG
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-26 FIRE TRAINING PIT AND AREA
DEPT.
ENVIRONMENTAL ENGINEERING
Drawing No.
728058-02003
FIGURE 3-20
SEAD-26 GROUNDWATER TOPOGRAPHY FOR THE TILL/WEATHERED SHALE AQUIFER-NOVEMBER 4, 1995
SCALE
1" = 100'
DATE
MARCH 1996
REV.
A


N
E 751500
E 751250
E 751000
N 993000
3400 SS26-9
711 SS26-10
827 SS26-11
935 SS26-12
SEAD26
39 SS26-13
46470 SS26-14
15780 SS26-15
5531 SS26-16
248 SS26-17
360 SS26-18
678 SS26-19
80 SS26-20
4468 SS26-21
14390 SS26-22
SS26-23
1590 SS26-24
1390 SS26-8
98 SS26-7
231 SS26-25
45330 SS26-26
38710 SS26-6
350 SS26-27
2226 SB26-6
2500 SS26-3
1350 SS26-28
1700 SS26-1
7184 SS26-29
4458 SB26-7
15580 SB26-5
2030 SB26-12
1310 SS26-2
56150 SS26-30
42 SS26-31
361 SS26-5
16930 SS26-32
1891 SS26-33
31340 SS26-34
3689 SS26-35
384 SB26-9
10911 SS26-4
9067 SB26-10
476 SS26-35
370 SS26-36
73 SS26-37
380 SS26-38
2777 SS26-39
956 SS26-40
631 SS26-41
8330 SS26-42
599 SS26-43
1677 SS26-44
3506 SS26-45
2219 SS26-46
SS26-47
LEGEND
SEAD-26
SURVEY MONUMENT WITH LABEL
ROAD SIGN
DECIDUOUS TREE
FIRE HYDRANT
MANHOLE
GUIDE POST
POLE
UTILITY BOX
COORDINATE GRID (250' GRID)
OVERHEAD UTILITY POLE
MAILBOX/RR SIGNAL
(NOT ALL SYMBOLS MAY APPEAR ON MAP)
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
744 GROUND SURFACE ELEVATION CONTOUR
UNDERGROUND ELECTRIC UTILITY LINE
UNDERGROUND WATER UTILITY LINE
APPROXIMATE EXTENT OF SEAD-26
1700 SS26-1 SURFACE SOIL SAMPLE LOCATION WITH PAH CONCENTRATION (ug/kg)
INDICATES NONE WERE DETECTED
50 0 50 100
(Feet)
ACAD\SENECA\RI-FS\SD26PAH.DWG
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-26 FIRE TRAINING PIT AND AREA
ENVIRONMENTAL ENGINEERING
Proj. no. 728059-02003
FIGURE 4-6
SEAD-26 TOTAL PAH'S
IN SURFACE SOILS
1" = 100'
MARCH 1996
REV A



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

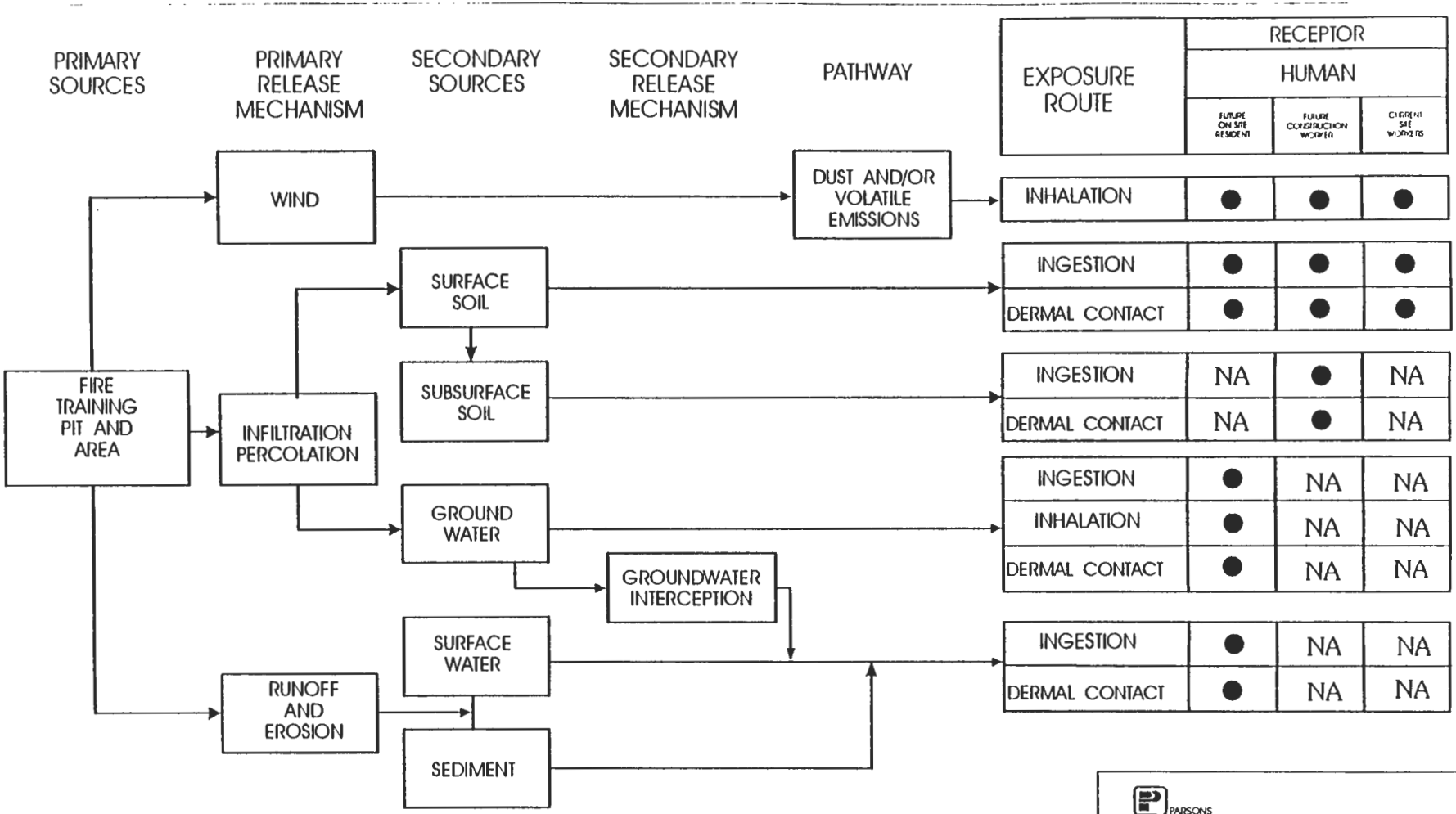
CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-26 FIRE TRAINING PIT AND AREA

DEPT: ENVIRONMENTAL ENGINEERING | PROJ. NO. 728069-02003

FIGURE 4-10
SEAD-26 DISTRIBUTION OF PAH'S IN SOIL

SCALE: 1" = 100' | DATE: MARCH 1996



PARSONS
PARSONS ENGINEERING SCIENCE, INC

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
RISK ASSESSMENT EXPOSURE PATHWAYS
SEAD-26 FIRE TRAINING PIT AND AREA

DEPT ENVIRONMENTAL ENGINEERING | DWG NO 728059 02002

FIGURE 7-13
EXPOSURE PATHWAY SUMMARY

SCALE NA | DATE MAY 1996

H:\ENG\SENECA\s2526\Figures\25EXP.CDR

Potential Soil Remedial Technologies for SEADs-25 & 26

- No-Action
- Off-Site Disposal (Landfilling)
- Containment (Slurry Walls and Caps)
- Vapor Extraction
- Bioremediation (In-Situ or Ex-Situ)
- Low Temperature Thermal Treatment
- Soil Washing

Potential Groundwater Remedial Technologies for SEAD-25

- No Action
- Pump and Treat (Collection Trench & Air Stripping/Carbon Adsorption)
- Bioremediation
- Air Sparging

Health Risk Assessment

U.S. Army Center for Health Promotion and Preventive Medicine

Health Risk Assessment and Risk Communication Program

HRA Objectives ~ 1

- *Provide a consistent Process for evaluating and documenting public health threats at sites*

HRA Objectives - 2

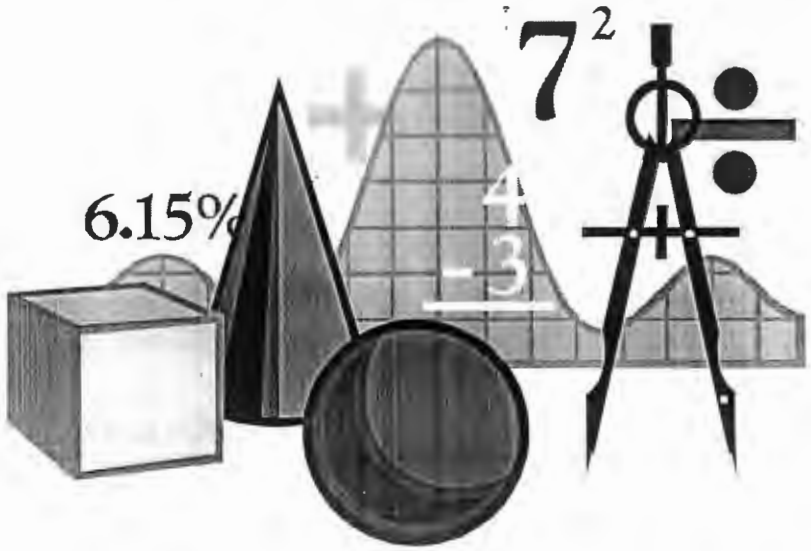
- *Provide an analysis of baseline risks and help determine the need for action at sites*

HRA Objectives - 3

- *Provide a basis for determining levels that can remain onsite and still be adequately protective of public health*

HRA Objectives ~ 4

- *Provide a basis for comparing potential health impacts of various remedial alternatives*



Superfund Remediation Process

- *CERCLA Information System (CERCLIS)*
  - *A listing of sites with possible releases of hazardous substances*
- *Preliminary Assessment (PA)*
  - *An initial evaluation of the site using existing information.*
  - *Approximately 50% of CERCLIS sites are eliminated from further consideration after PA*

Superfund Remediation Process

- *Site Inspection (SI)*
  - *Based on the results of the PA, an SI may be performed to:*
    - *Determine if there is a potential threat to human health or the environment*
    - *Determine if there is an immediate threat to people in the area*
    - *Collect sufficient data (which may include limited sampling) to enable the site to be scored using HRS*

Superfund Remediation Process

- *Interagency Agreement*
  - *Agreement between the federal facility, EPA, and often the state to address remediation at the site*
- *Remedial Investigation*

Remedial Investigation (RI)

- *Purpose*
  - *To Collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives*
  - *Usually contains BRA*

Superfund Remediation Process

- Baseline Risk Assessment

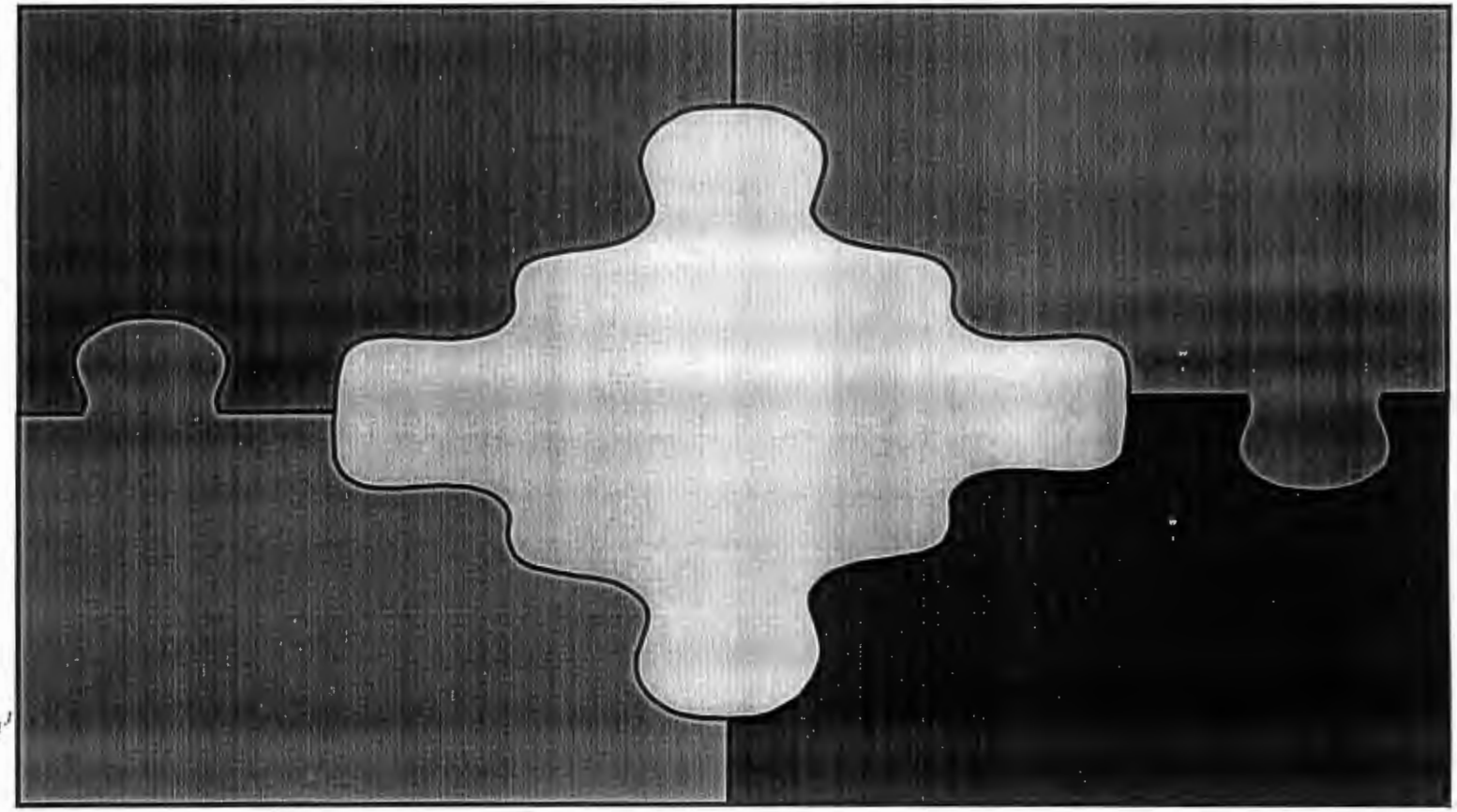
Superfund Remediation Process

- *Feasibility Study*
  - *Develop and evaluate remedial alternatives*

Superfund Remediation Process

- *Record of Decision (ROD)*
  - *Final remedy decision agreed upon by regulated and regulating agencies*
- *Remedial Design (RD)*
  - *Development of actual design of the selected remedy*
- *Remedial Action (RA)*
  - *Implementation of the remedy*

Risk Assessment Process



Risk Assessment Process

- *Data Collection*
- *Data Evaluation*
- *Exposure Assessment*
- *Toxicity Assessment*
- *Risk Characterization*

Data Collection

- *Collect Existing Information*
- *Address Modeling Needs*
- *Collect Background Data*
- *Conduct Preliminary Exposure Assessment*
- *Devise Strategy for Sample Collection*
- *Identify Special Analytical Needs*
- *Examine QA/QC Measures*

Data Collection

- *Data Needed for Risk Assessment*
  - *Contaminant Identities*
  - *Contaminant Concentrations*
  - *Characteristics of Source*
  - *Characteristics of Environmental Setting*
    - *As they may affect fate, transport and persistence*

Data Collection

- *Based on review of existing information, develop a conceptual site model*
  - *Sources*
  - *Pathways*
  - *Receptors*

Data Collection

- *Background*
  - *Naturally occurring - Ambient concentrations of chemicals present in the environment that have not been influenced by humans*
  - *Anthropogenic - Concentrations of chemicals that are present in the environment du to human made non-site sources*

Data Collection

- *Preliminary Identification of Potential Human Exposure*
  - *Media of Concern*
  - *Areas of Concern*
  - *Types of Chemicals*
  - *Routes of Transport*

Data Collection

Media ~ Soil

- *Heterogeneous Nature of Soil*
- *Designation of Hot Spots*
- *Depth of Samples*
- *Fate and Transport Properties*
- *"Exposure" Properties*

Data Collection

Media - Ground Water

- *Hydrogeologic Properties*
- *Well Location*
- *Well Depth*
- *Filtered Vs. Unfiltered Samples*
- *"Exposure" Properties*

Data Collection

Media ~ Surface Water and Sediment

- *Lotic Waters*
- *Lentic Waters*
- *Estuaries*
- *Sediments*
- *"Exposure" Properties*

Data Collection

Media - Air

- Time and Space
- Emission Sources
- Meteorological Conditions
- Modeling Considerations
- "Exposure" Properties

Data Collection

Media ~ Biota

- *Area Specific Food Preferences*
- *Usability*
- *Whole vs. Portion*
- *Time*

Data Evaluation

- *Combine Available SI Data*
- *Evaluate Analytical Methods*
- *Evaluate Quantitation Limits*
- *Evaluate Qualified and Coded Data*
- *Evaluate Blanks*
- *Evaluate Tentatively Identified Compounds*
- *Compare Site Data with Background*
- *Identify Chemicals of Potential Concern*

Data Evaluation

- Comparison of Blanks with Sample Data
  - Containing Common Laboratory Contaminants
    - Methyl ethyl ketone
    - Methylene Chloride
    - Toluene
    - Pthalate esters
  - Containing Other Contaminants

Data Evaluation

- *Comparison of Samples with Background*
  - *Use appropriate background data*
  - *Identify statistical methods - statistical significance*
  - *compare concentrations with naturally occurring levels*
  - *compare chemical concentrations with anthropogenic levels*

Data Evaluation

- *Identify Chemicals of Potential Concern*
  - *Positively detected in at least one sample with adequate QA/QC*
  - *Detected at levels significantly elevated above naturally occurring levels*
  - *Tentatively identified, but associated with the site based on historical information*
  - *Transformation or breakdown products of chemicals known to be present*

Exposure Assessment

- *Characterize the Physical Setting*
- *Identify Potentially Exposed Populations*
- *Identify Potential Exposure Pathways*
- *Estimate Exposure Concentrations*
- *Estimate Chemical Intakes*

Exposure Assessment

Step 1

- Characterize the Physical Setting
  - Climate
  - Meteorology
  - Geologic Setting
  - Vegetation
  - Soil Type
  - Ground Water Hydrology
  - Location and Description of Surface Water

Exposure Assessment

Step 2

- *Characterize Potentially Exposed Populations*
  - *Determine location of current populations relative to the site*
  - *Determine current land use*
  - *Determine future land use*
  - *Identify subpopulations of potential concern*

Exposure Assessment

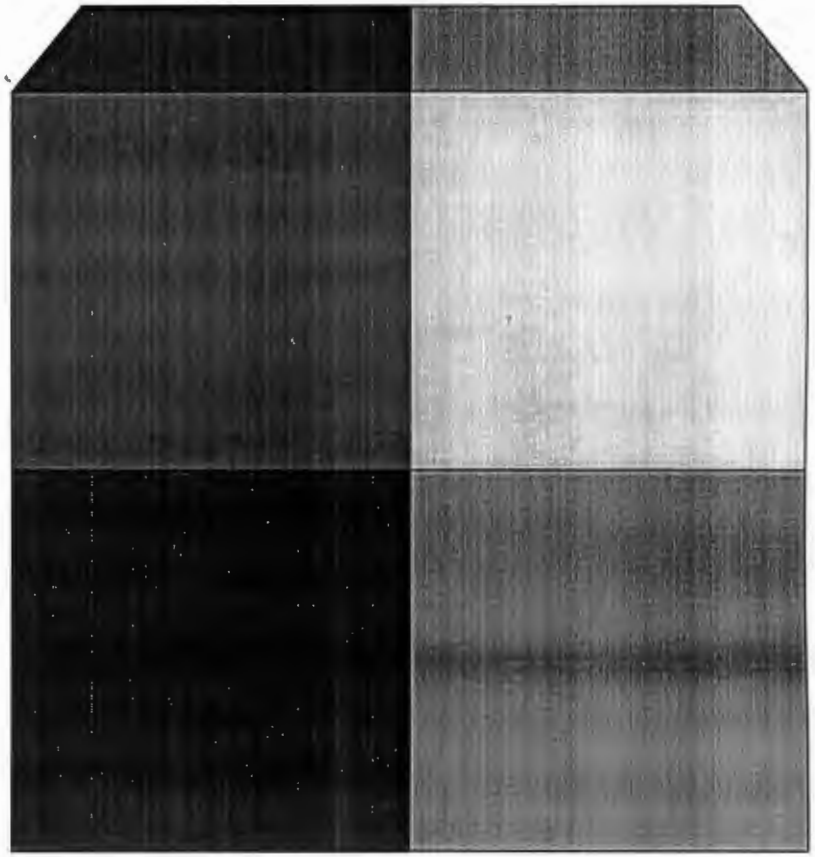
Step 3

- *Identify Potential Exposure Pathways*
  - *Identify sources and receiving media*
  - *Evaluate fate and transport in release media*
  - *Integrate information into exposure pathways*

Reasonable Maximum Exposure

Exposure Assessment

- Estimation of Chemical Intakes



Exposure Assessment

Step 4

- *Determination of Exposure Concentrations*
  - *Media specific*
  - *Statistically based*
  - *Direct use of monitoring data*
  - *Use of modeling data*

Toxicity Assessment

- *Gather Qualitative and Quantitative Toxicity Information for Substances being Evaluated*
- *Identify Exposure Periods for Which Toxicity Values are Necessary*
- *Determine Toxicity Values for Noncarcinogenic Effects*
- *Determine Toxicity Values for Carcinogenic Effects*

Toxicity Assessment

- *Gather Toxicity Information for Substances Being Evaluated*

Toxicity Assessment

- *Sources of Toxicological Information*
  - *Integrated Risk Information System (IRIS)*
  - *Health Effects Summary Tables (HEAST)*
  - *EPA Criteria Documents*
  - *ATSDR Toxicological Profiles*
  - *EPA Environmental Criteria and Assessment Office (ECAO)*
  - *Open Literature*

Toxicity Assessment

- *Noncarcinogenic Toxicity Assessment*
  - *Uses Reference Dose (RfD)*
  - *mg/kg-day*

Toxicity Assessment

- *Carcinogenic Toxicity Assessment*
  - *Uses Slope Factors*
    - *Based on one-hit linear dose response*
  - *$(mg/kg\text{-}day)^{-1}$*

Toxicity Assessment

- Carcinogenicity Weight of Evidence (EPA)
  - A ~ Known human carcinogen
  - B ~ Probable human carcinogen
    - B1 ~ Limited human data available
    - B2 ~ Sufficient animal data, inadequate or no evidence in humans
  - C ~ Possible human carcinogen
  - D ~ Not classifiable
  - E ~ Evidence of noncarcinogenicity in humans

Risk Characterization

- *Review Outputs from Toxicity and Exposure Assessments*
- *Quantify Risks from Individual Chemicals*
- *Quantify Risks from Multiple Chemicals*
- *Combine Risk Across Exposure Pathways*
- *Assess and Present Uncertainty*
- *Consider Site-Specific Human Studies*

Risk Characterization

- *Review Outputs from Toxicity and Exposure Assessments*

Risk Characterization

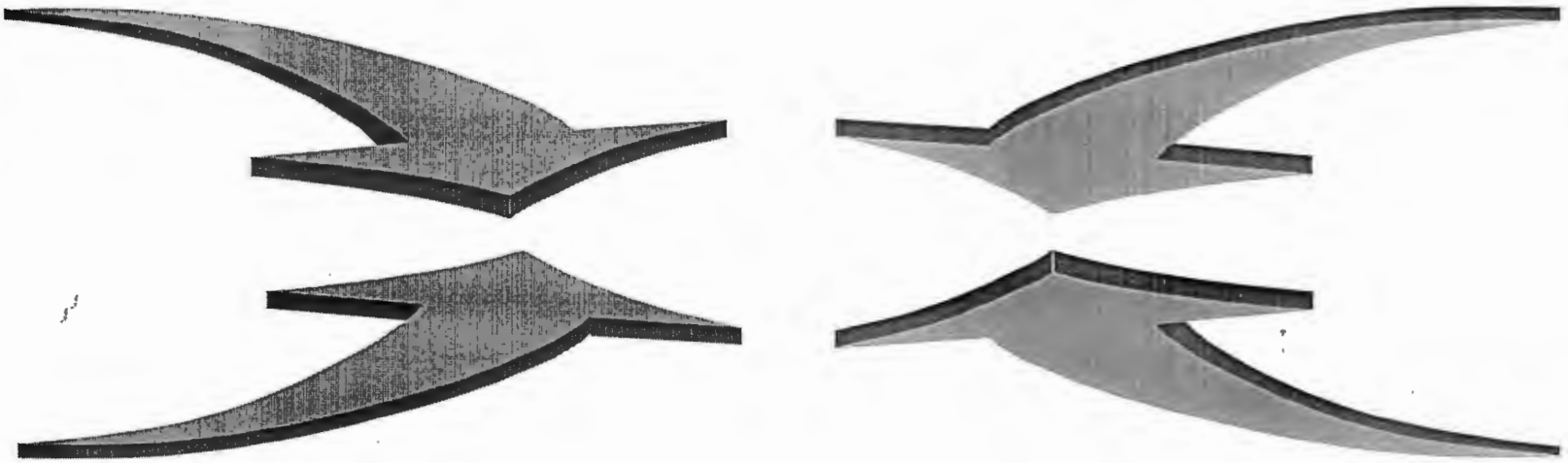
- *Calculate Risks from Individual Chemicals*
  - *Carcinogenic Risk*
    - *Intake X Toxicity = Risk*
    - *Risk expressed as probability in hypothetically exposed population*
  - *Noncarcinogenic Risk*
    - *Intake/Toxicity = Hazard Quotient*
    - *HQ > 1 indicates potential for adverse health effects (noncarcinogenic)*

Risk Characterization

- *Quantify Risks from Multiple Chemicals*
  - *Carcinogenic Risk ~~~> Summation of risk for all chemicals*
  - *Noncarcinogenic Risk ~~~> Summation of HQs to determine Hazard Index*

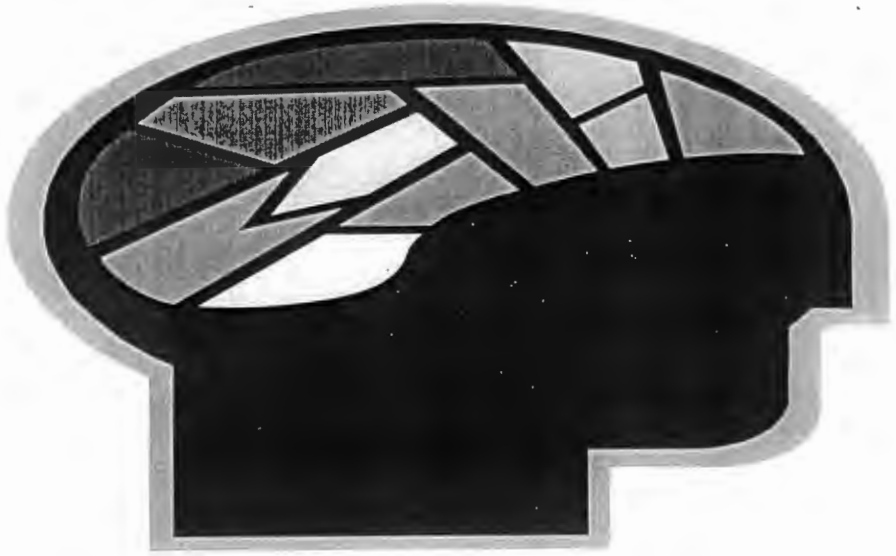
Risk Characterization

- *Combine Risks Across Exposure Pathway*
  - *Summation for both carcinogenic and noncarcinogenic effects in the same manner as for multiple chemicals*



Risk Characterization

- *Assess and Present Uncertainty*
  - *Lack of data and/or scientific certainty necessitates use of assumptions*



Restoration Advisory Board
Meeting Agenda

October 15, 1996

7:00	**Welcome** LTC Stephen W. Brooks Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
7:15	**BRAC Cleanup Plan Update** Mr. Richard J. Newill Woodward-Clyde Federal Services
7:45	**Break**
8:00	**Radiological Sites Investigation Status** Mr. Michael Duchesneau Parsons Engineering Science, Inc.
8:30	**Open Discussion**
9:00	**Adjourn**

MINUTES
RESTORATION ADVISORY BOARD
OCTOBER 15, 1996 MEETING MINUTES

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Kamal Gupta, NYS Department of Environmental Conservation
Dan Geraghty, NYS Department of Health

Government RAB Members Not Present:

Carla Struble, U.S. Environmental Protection Agency

Community RAB Members Present:

Dick Durst/Community Co-Chair, Anne Herman, David Wagner,
Brian Dombrowski, Richard Sisson, Al Legasse, Lucinda Sangree,
Estelle Coleman, Frank Ives, Henry Van Ness, Harold Kugelmass

Community RAB Members Not Present:

Russell Miller, Mary Ann Krupsak, Richard Lewis, Carmen Serrett

Government and Technical Support Personnel Present:

LTC Stephen Brooks, SEDA Commander
Jerry Whitaker, SEDA Base Transition Coordinator
Beverly Lombardo, SEDA Public Affairs Officer
Joanne Ogden, SEDA Legal Office Representative
Thomas Enroth, SEDA Engineering and Environmental Division
Janet Fallo, SEDA Engineering and Environmental Division
Susan Cooper, SEDA Secretary
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Mike Duchesneau, Parsons Engineering Science, Inc.
Andrew Schwartz, Parsons Engineering Science, Inc.
Keith Hoddinott, U.S. Army Environmental Center for Health Promotion and Preventive Medicine
Michael Rivara, NYS Department of Health
Rick Newill, Woodward-Clyde Federal Services
Robert Scott, NYS Department of Environmental Conservation
Jeff Waugh, U.S. Army Environmental Center
Dorothy Richards, U.S. Army Corps of Engineers, Huntsville District

Others Present (from sign-in sheet):

Christopher Raddell, Community Member
Joanne Howard, Community Member

Nellie Legasse, Community Member
Karl Bechler, Community Member
Patricia Jones, LRA

2. LTC Brooks welcomed members and support staff to the October Restoration Advisory Board in the NCO Club. Stephen Absolom then delivered opening remarks, outlined the evening's agenda, and asked for introductions.

3. Minutes from the September's RAB meeting were then approved, signed, and accepted into record. The minutes required a change to show Harold Kugelmass present.

4. An update on the BRAC Cleanup Plan (BCP) was presented by Rick Newill of Woodward-Clyde. The presentation covered the BRAC Cleanup Plan's goals and objectives; requirements; the BRAC Cleanup Team, it's role, coordination, and support agencies; the BCP process; document outline; and future planning. Dr. Durst asked how big the document was and if it would be available for review. In response to Dr. Durst's question, the document will be available for review in the Information Repository located in the Romulus Town Hall and in the Economic Development and Planning Office at the Seneca County Office Building after November 12, 1996.

5. LTC Brooks made opening remarks to the briefing by Mike Duchesneau on the Radiological Sites Investigation Status at the Former Weapons Storage Area, SEAD-12. He stated that we were there to discuss environmental issues and not specific Army missions. Mike Duchesneau proceeded with a discussion on the environmental sites which consist of a waste burial disposal pit, dry waste disposal pit, and wastewater storage tank. Milestones were listed as well as site status, sampling procedures, and results of sampling from soil borings and monitoring wells. Results of soil and groundwater sampling showed localized low level radioactive contamination. Further testing will be performed as part of the remedial investigation. Issues raised during the presentation follow:

a. Concerns were raised regarding geophysical investigations for detecting metal objects. Mike Duchesneau explained that detecting metal can reveal burial sites not previously identified. It was then asked how contaminated sites that do not contain metal objects are detected. He explained that they use Ground Penetrating Radar (GPR) to detect disturbances in the soil, then sample the disturbed areas for contamination.

b. From the photographs of the metal anomalies found, there were questions regarding whether they could be associated with military operations previously conducted or old farm equipment from the residents located here before depot operations. The appearance and size of the objects found would indicate some type of aluminum solid waste, however, the objects were not identified.

c. A discussion took place on the definition of an alpha radiation particle. Other contaminants looked for included metals, PCBs, pesticides, and solvents. Mike Duchesneau described an alpha particle as high-energy and one in a series of radioactive particles. Dr. Durst mentioned that this is the most dangerous type of radioactive particle because it ionizes quickly and can be a problem when drinking or inhaling it. Mike Duchesneau responded that contamination is below the ground surface, groundwater on the site is not used for drinking, and safety precautions are taken when working on site.

d. A question arose regarding sampling and the significance of the regulatory standard reading of 15 pCi/L for radiation is set by the State. Readings above 15 pCi/L are levels for concern. Testing is also being conducted to determine levels of natural radiation in soil and groundwater.

e. The waste burial pits were questioned in regards to the items found there. The residual contamination and other items disposed of were consistent with the mission ongoing in that area.

f. A concern was raised considering possible past disposal practices of classified material over vast areas of the depot. The response was that sites were identified and defined based on historical information and that it was improbable that such activities took place in other areas not previously identified.

g. An inquiry was made as to whether water samples were collected from a creek near the burial pit site. Mike Duchesneau stated that surface water and sediment samples were collected from the creek and no elevated readings were found. It was also mentioned that the creek is a small, intermittent stream and does not flow continuously.

6. During general discussion, RAB members suggested topics for future meetings:

a. A presentation by the Local Redevelopment Authority (LRA) on its Reuse Plan based on the current schedule adopted by the Seneca County Board of Supervisors. Impacts on sites and zoning was also suggested to tie together initiatives of the LRA and the RAB.

b. National Environmental Policy Act (NEPA) and Environmental Impact Statement.

7. The next Restoration Advisory Board meeting will be held on November 19, 1996 at 7:00 p.m. at the SEDA NCO Club.

8. The meeting was adjourned at 9:00 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

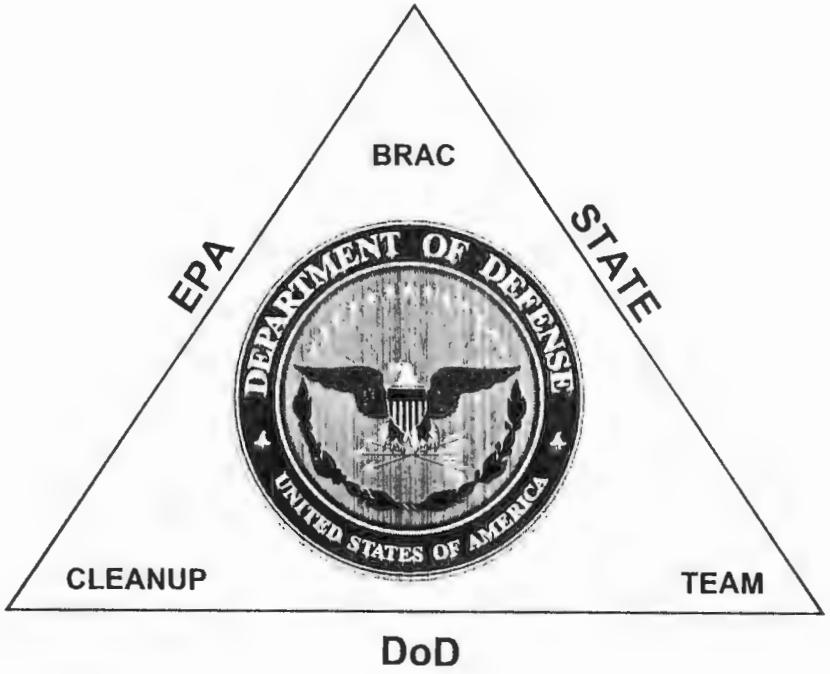
APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

BRAC Cleanup Plan Support



Woodward-Clyde

BRAC Cleanup Plan

- **BRAC Cleanup Plan (BCP) goal is expediting and improving environmental response leading to disposal or reuse of property.**
- **The BCP is a comprehensive summary of:**
  - ***Status*** **of environmental programs**
  - ***Strategy*** **for selecting and implementing actions**
  - ***Schedule*** **for actions**

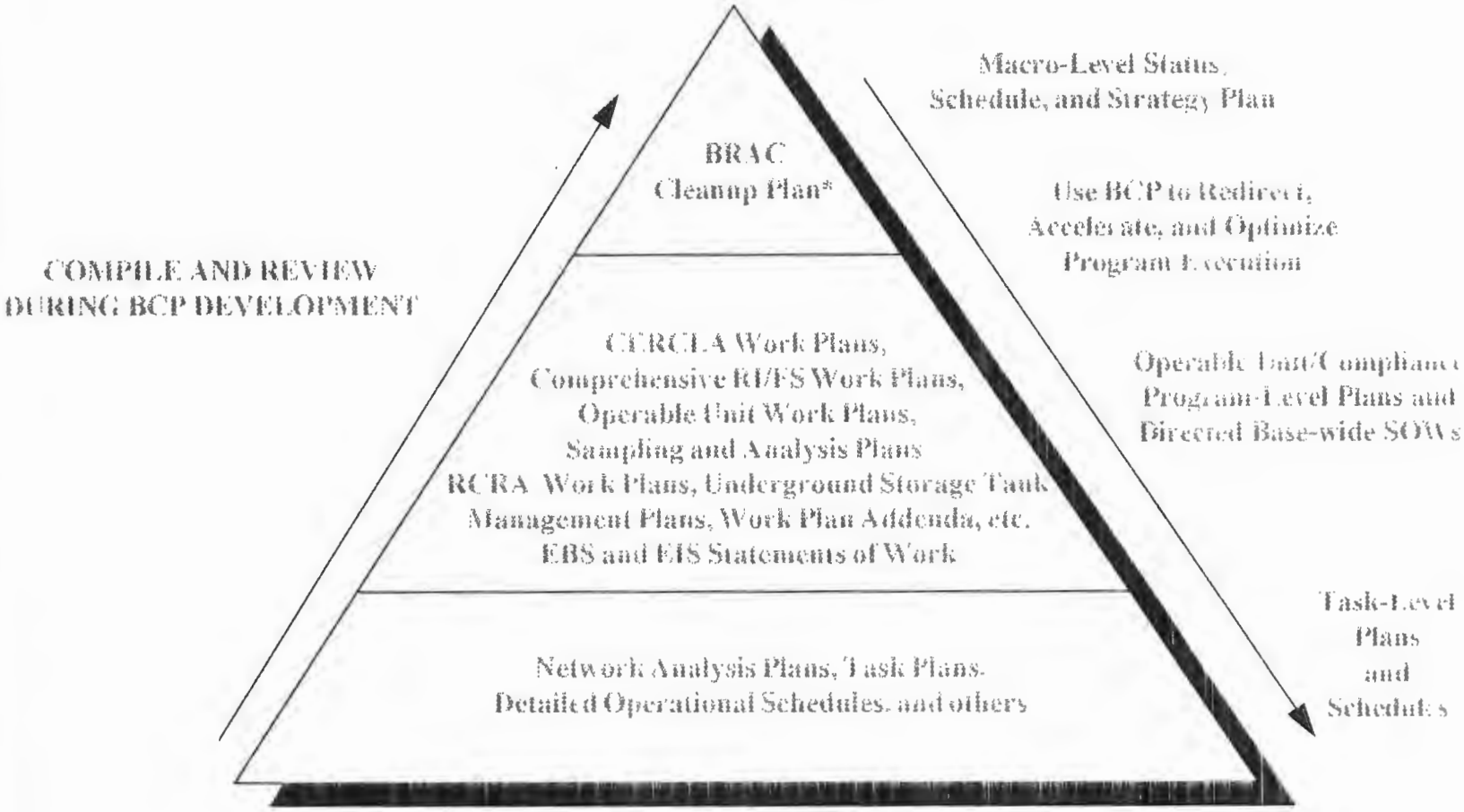
Woodward-Clyde

BRAC Cleanup Plan (BCP)
Goals and Objectives

- Macro-level status, schedule and strategy for environmental response leading to disposal and reuse.
- Version 1 (1996) is a "snapshot" of existing installation programs and future strategy.
- Version 2 (1997) will reflect further analysis and input from BCT, RAB and LRA.

Woodward-Clyde

BCP Requirements



*** A BCP is a comprehensive summary of the status of your installation's environmental programs, and provides a strategy and schedule for selecting and implementing response actions under all applicable regulatory programs.**

Woodward-Clyde

BRAC Cleanup Team

- **Comprised of the following individuals:**
  - **Steve Absolom - BRAC Environmental Coordinator**
  - **Carla Struble - U.S. Environmental Protection Agency, Region 1**
  - **Kamal Gupta - N.Y. State Department of Environmental Conservation**
- **Composition of the BCT is designed to:**
  - **Bring empowered decision makers to the table to make remediation decisions**
  - **Expedite cleanup and reuse decisions**

ROLE OF BCT

- PRIMARY FORUM FOR ISSUES AFFECTING EXECUTION OF CLEANUP TO FACILITATE REUSE
- MANAGES 5-STEP BCP PROCESS
- PREPARES BCP
- IDENTIFIES RESOURCES TO FACILITATE BCP PROCESS
- CONDUCTS BOTTOM-UP REVIEW

Woodward-Clyde

BCT COORDINATES WITH:

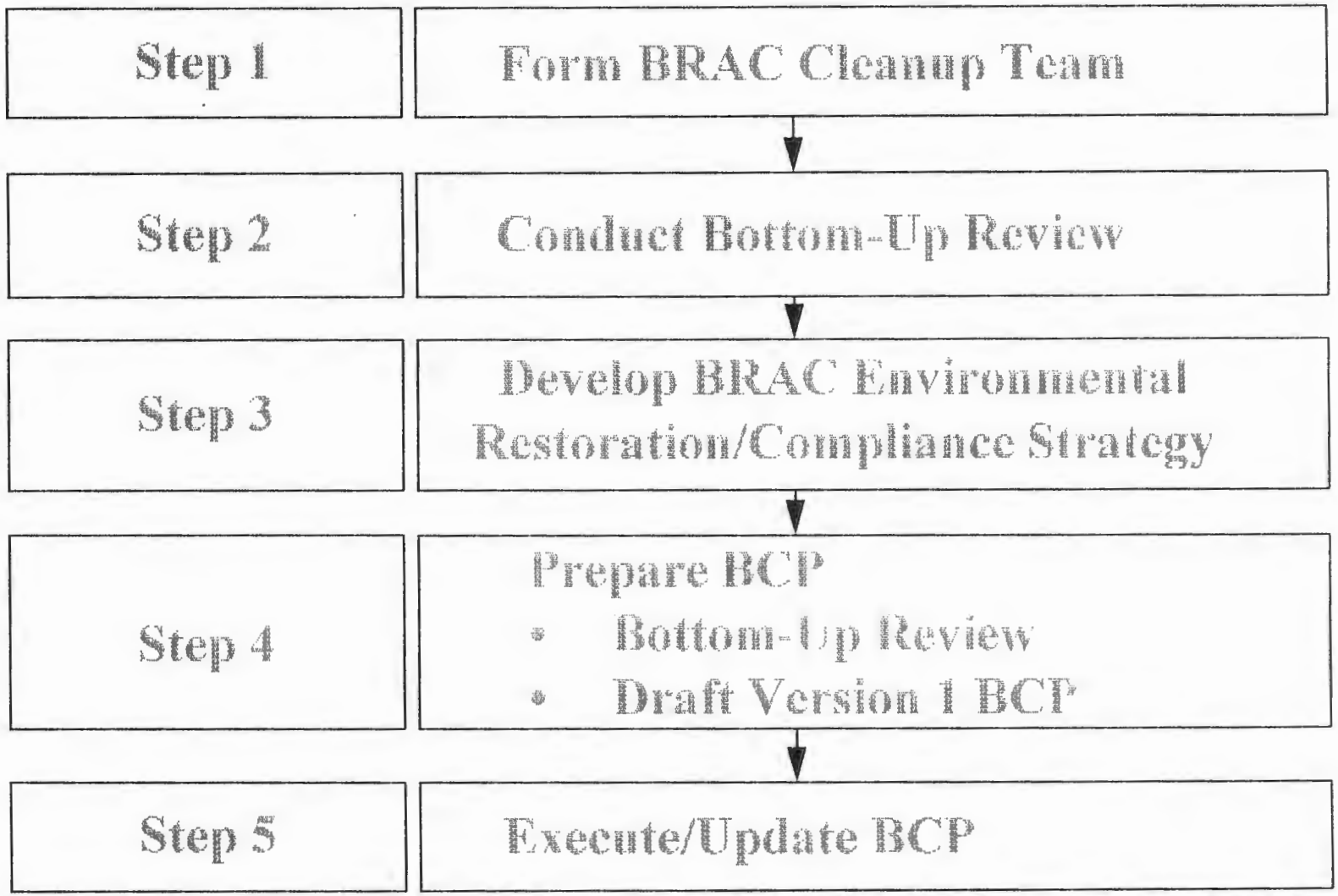
- INSTALLATION COMMANDER
- DoD BASE TRANSITION COORDINATOR
- FACILITY/CARETAKER
- REAL/PERSONAL PROPERTY
- RESTORATION ADVISORY BOARD
- COMMUNITY REUSE COMMITTEE

Woodward-Clyde

SEDA BCT is supported by:

- **U.S. Army**
  - Installation personnel (Environmental, operations, legal, real estate)
  - U.S. Army Corps of Engineers, N.Y. District
  - U.S. Army Corps of Engineers, Huntsville Division
  - Center for Health Promotion and Preventative Medicine
  - U.S. Army Industrial Operations Command
  - U.S. Army Materiel Command
  - Department of the Army BRAC Office
  - U.S. Army Environmental Center
- **N.Y. State Department of Health**
- **Local Redevelopment Authority**
- **Contractors**
  - Woodward-Clyde
  - Parsons Engineering Science
  - Malcom Pirnie

BCP Process



Woodward-Clyde

Bottom-Up Review Performed by BCT

- BRAC Cleanup Team and Project Team
- Environmental Program Status
- Environmental Program Strategy
- Master Schedules
- Technical/Operational Issues
- Disposal Process/Reuse Options
- Disposal Related Environmental Issues

Woodward-Clyde

BCP Outline

1.0 Introduction and Summary

2.0 Property Disposal and Reuse Plan

3.0 Installation-Wide Environmental Program Status

4.0 Installation-Wide Strategy for Environmental Restoration

5.0 Environmental Program Master Schedules

6.0 Technical and Other Issues to be Resolved

Appendix A - Fiscal Year Funding Requirements/Costs

Appendix B - Installation Environmental Restoration Documents Summary Tables

Appendix C - Decision Document/RAD Summaries

Appendix D - NFRAP Summaries

Appendix E - Conceptual Model Data Summaries

Woodward-Clyde

Looking Forward

- **Current Status**
  - Draft Version 1 BCP submitted September 1996
  - Completed review by U.S. Army, U.S. EPA, NYSDEC
  - Currently preparing the Final Version 1 BCP
- **Next Steps**
  - BCT will continue to meet periodically to assess progress
  - Version 2 BCP update will be prepared in approximately one year to reflect progress in remediation activities and redevelopment status

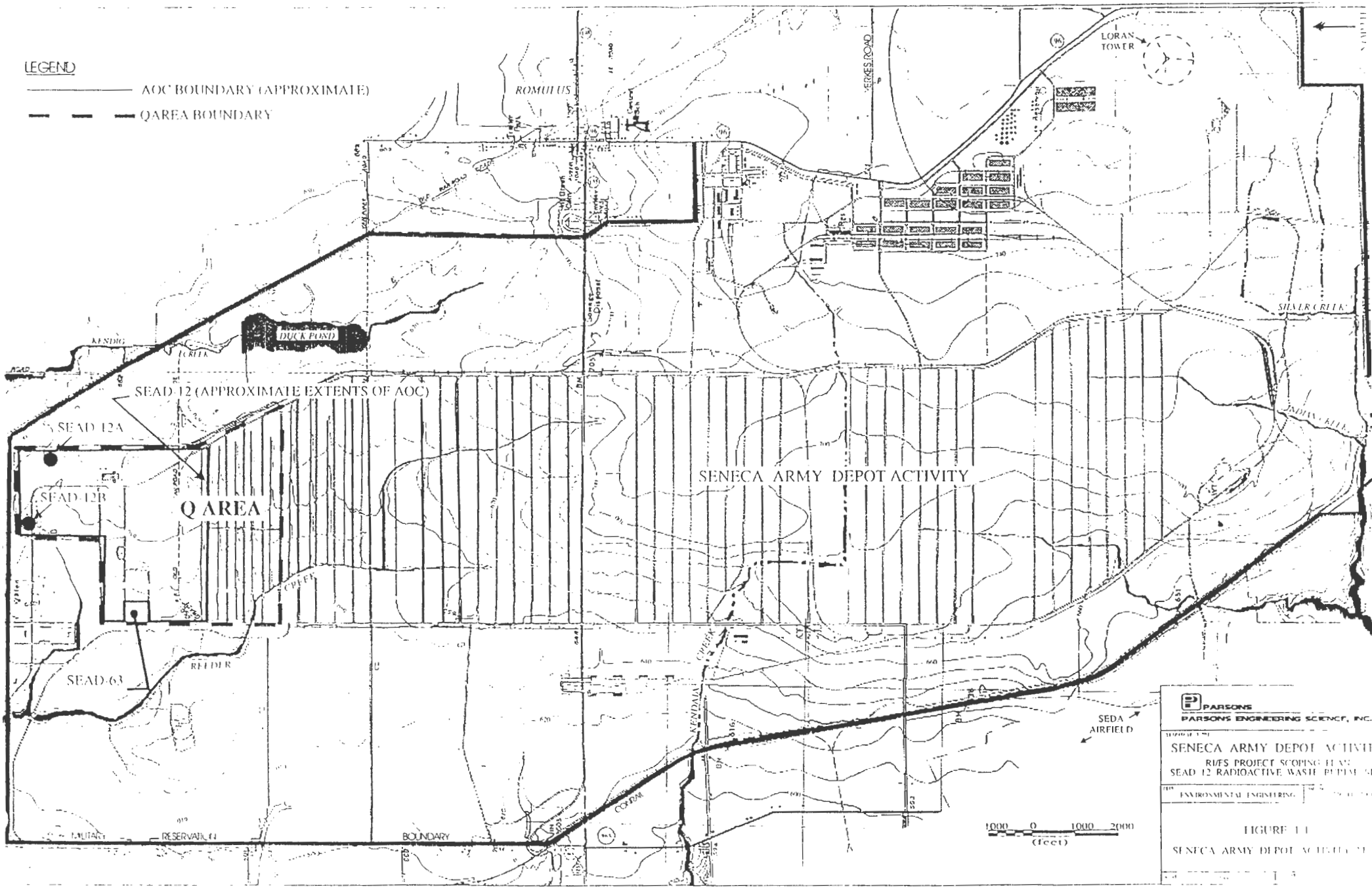
Presentation to the RAB

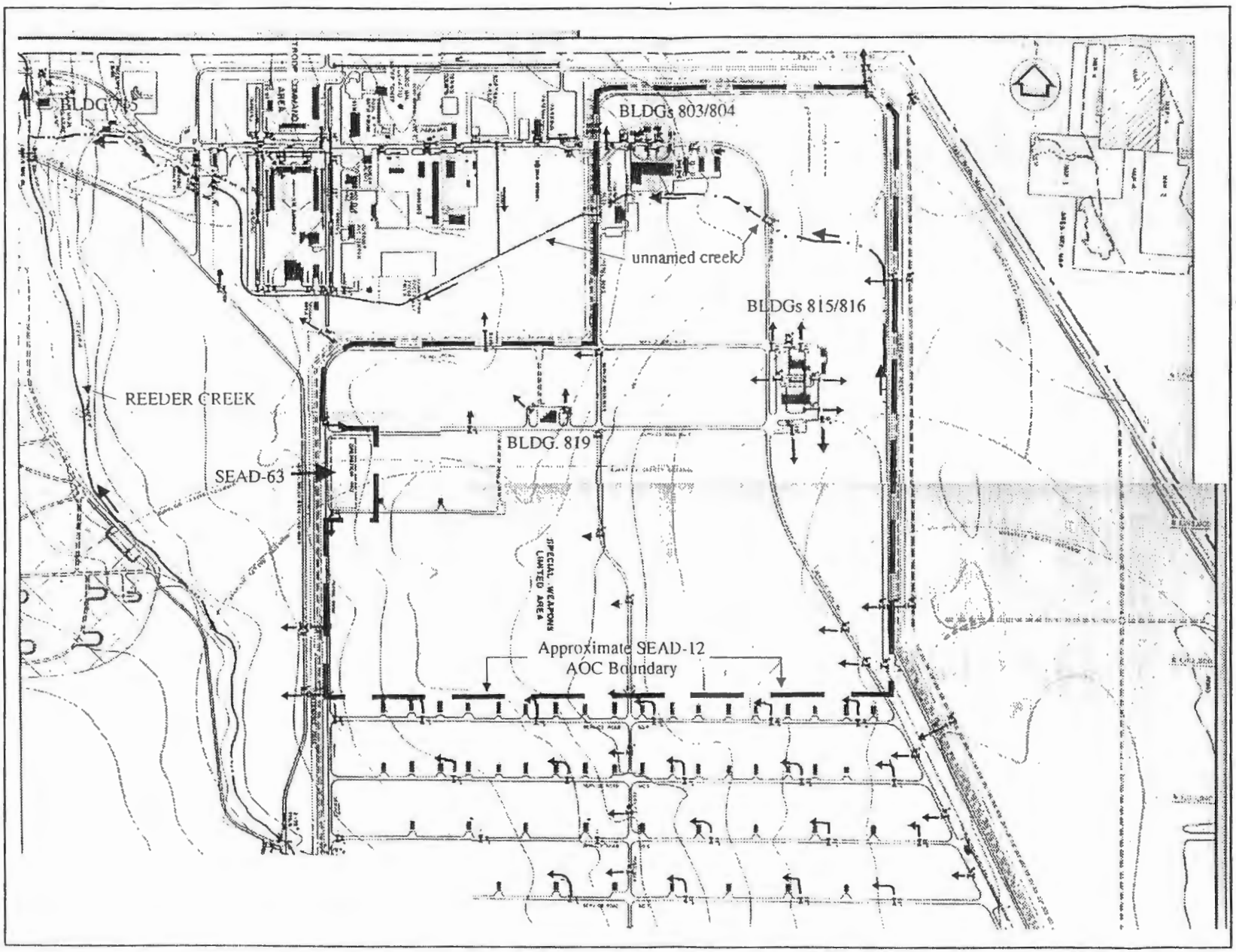
October 15,1996

Update on Site Status

at SEAD-12,

Former Weapons Storage Area


LEGEND
AOC BOUNDARY (APPROXIMATE)
QAREA BOUNDARY
ROMULUS
VERKES ROAD
LORAN TOWER
DUCK POND
KENDIG CREEK
SILVER CREEK
INDIAN VALLEY
SEAD-12 (APPROXIMATE EXTENTS OF AOC)
SEAD-12A
SEAD-12B
Q AREA
SENECA ARMY DEPOT ACTIVITY
SEAD-63
REEDER CREEK
KENDIG CREEK
CORDM
SEDA AIRFIELD
RESERVATION BOUNDARY
1000 0 1000 2000
(feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS PROJECT SCOPING PLAN
SEAD 12 RADIOACTIVE WASTE DISPOSAL
ENVIRONMENTAL ENGINEERING
FIGURE 1-1
SENECA ARMY DEPOT ACTIVITY



Legend:

- Direction of surface water flow
- Culvert
- AOC boundary (approximate)
- SEDA railroad

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

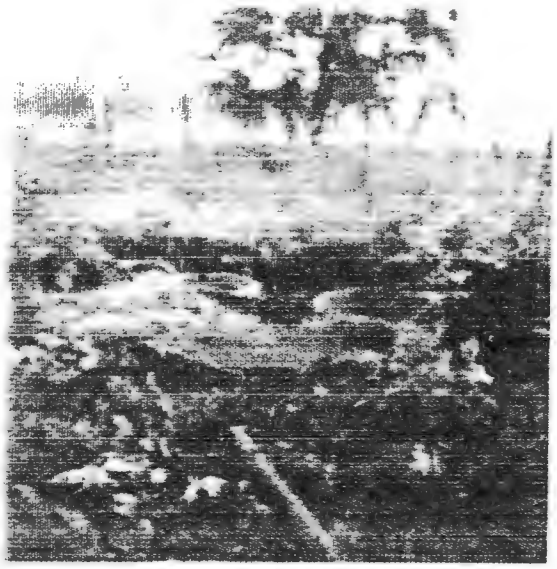
SENECA ARMY DEPOT
RI/FS PROJECT SCOPING PLAN
SEAD-12

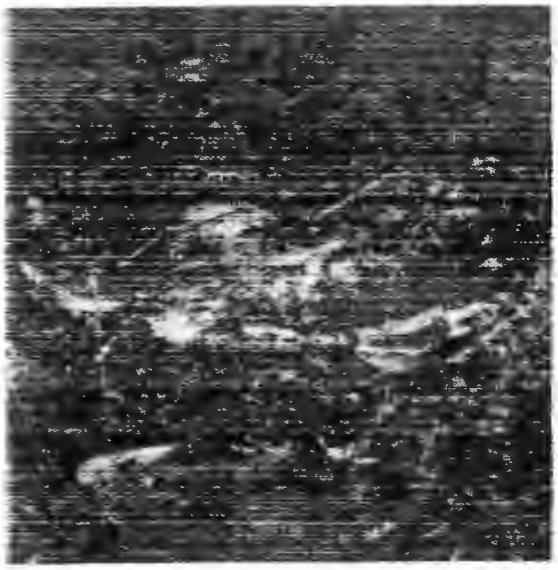
ENVIRONMENTAL ENGINEERING

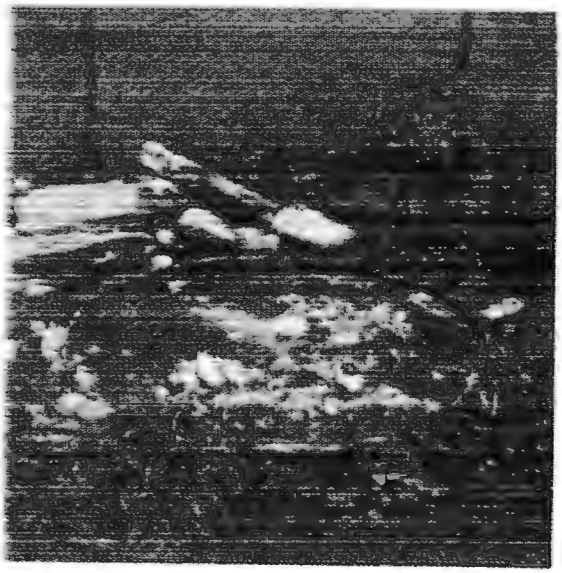
FIGURE 3-10
SURFACE WATER FLOW DIRECTION
FOR SEAD-12

Site Status at SEAD-12

- √ Originally Split into Two Sites, SEAD-12A and SEAD-12B
- √ SEAD-12A : Area of the Former Waste Burial Disposal Pits
- √ SEAD-12B : Area of Dry Waste Disposal Pit and Wastewater Storage Tank





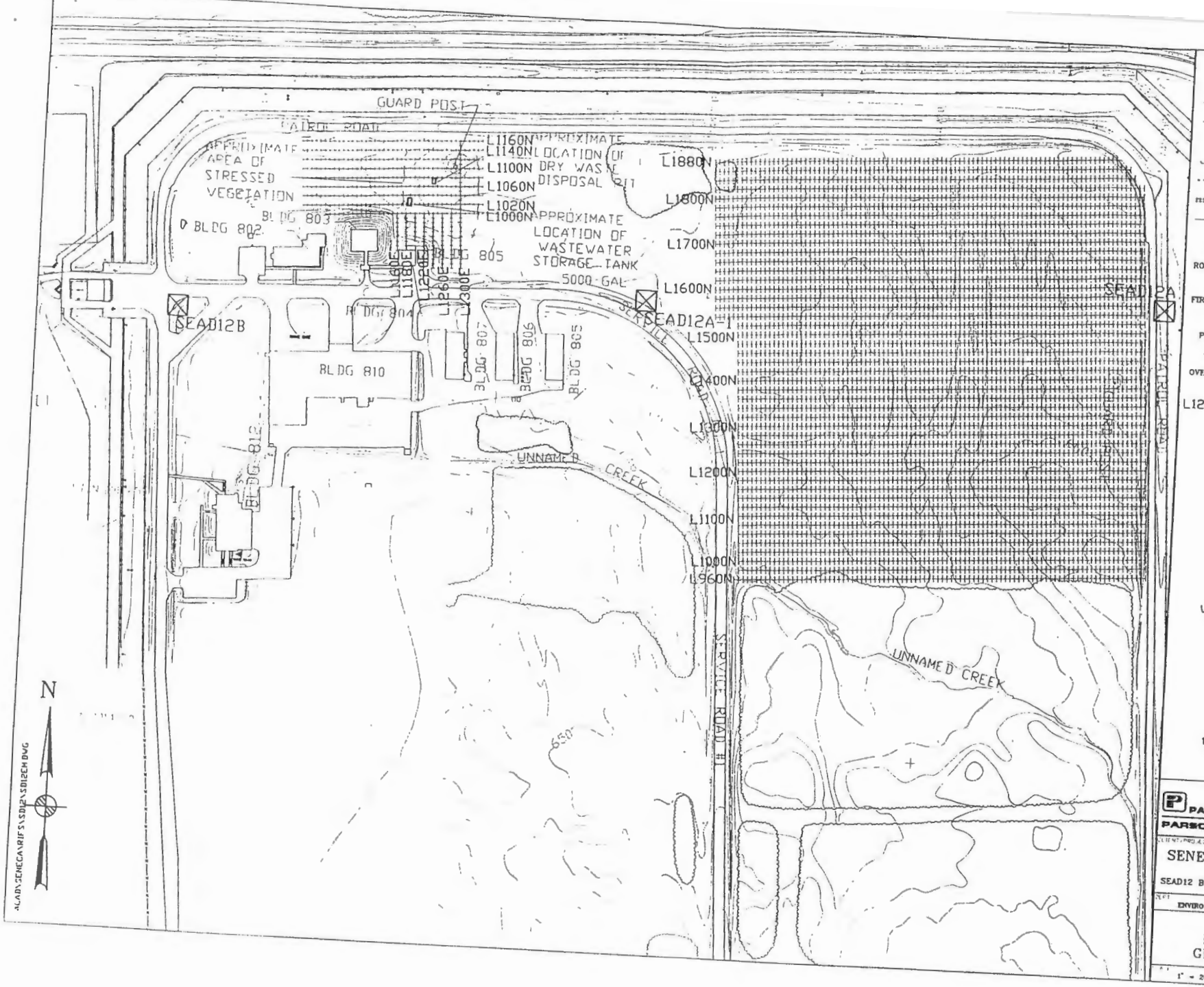


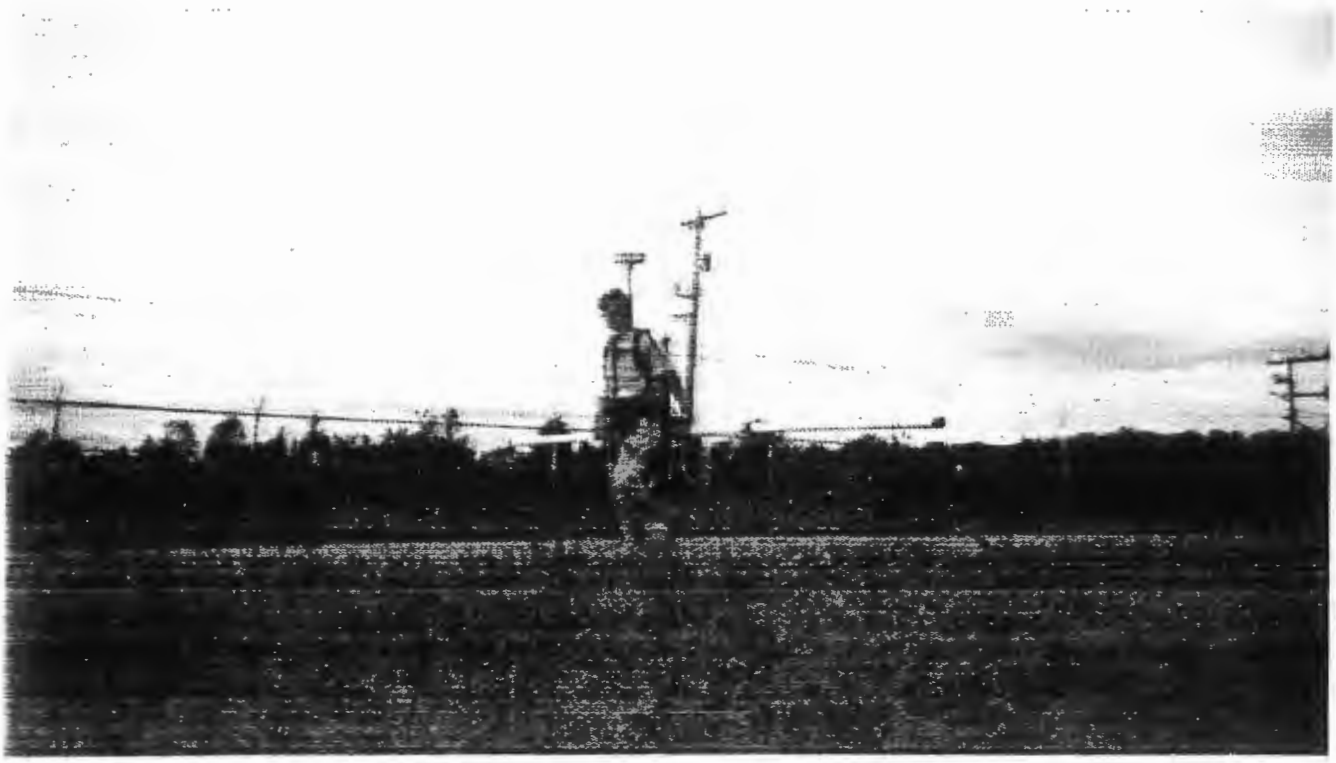
SEAD-12 Milestones

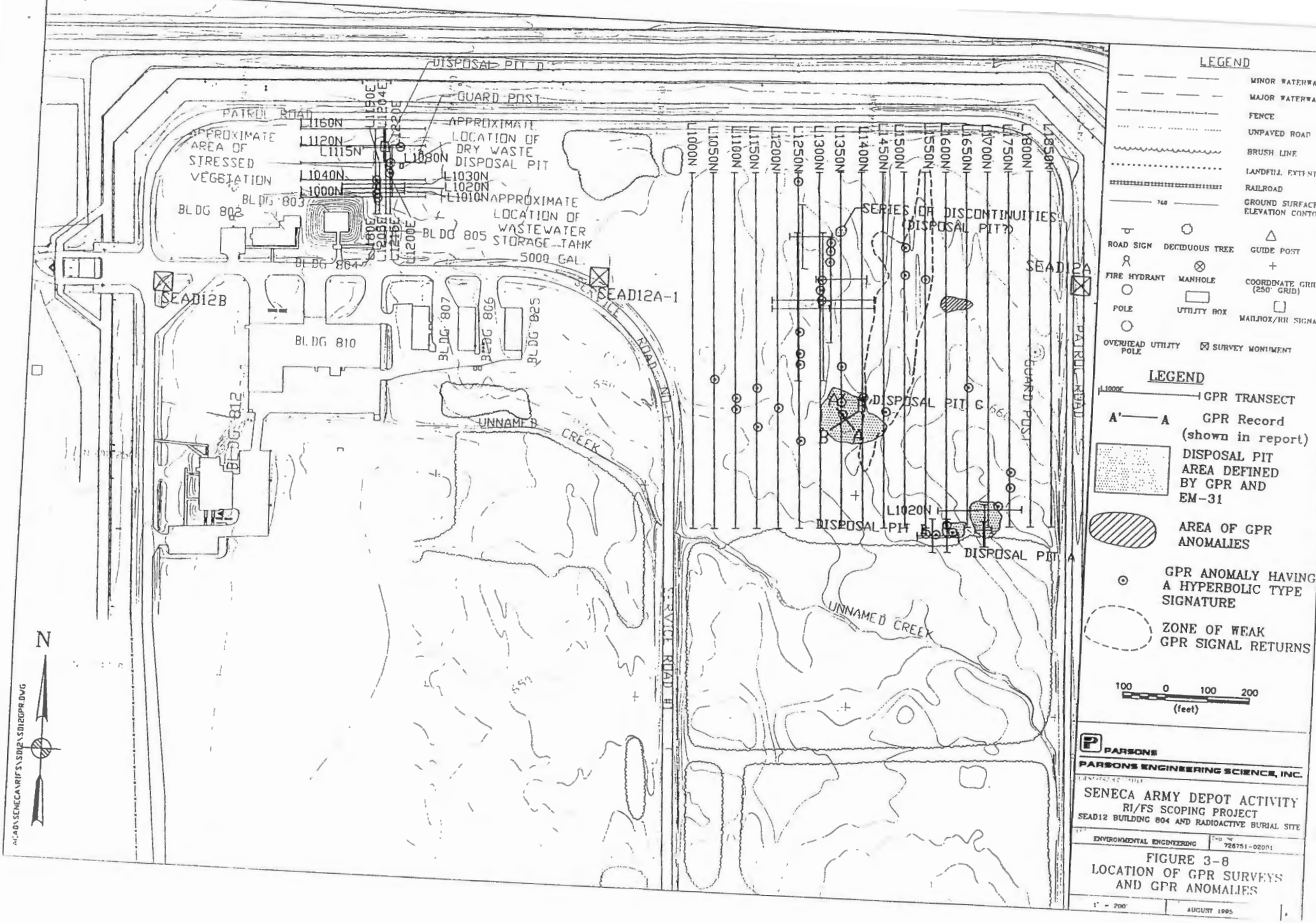
- √ Draft Report ESI Issued April, 1995
- √ Draft-Final ESI Issued Jan., 1996
- √ Army Recommended an RI
- √ Draft RI Workplan Issued Dec. 1995
- √ EPA Comments Recd. July, 1996
- √ NYSDEC Comments Recd. July, 1996

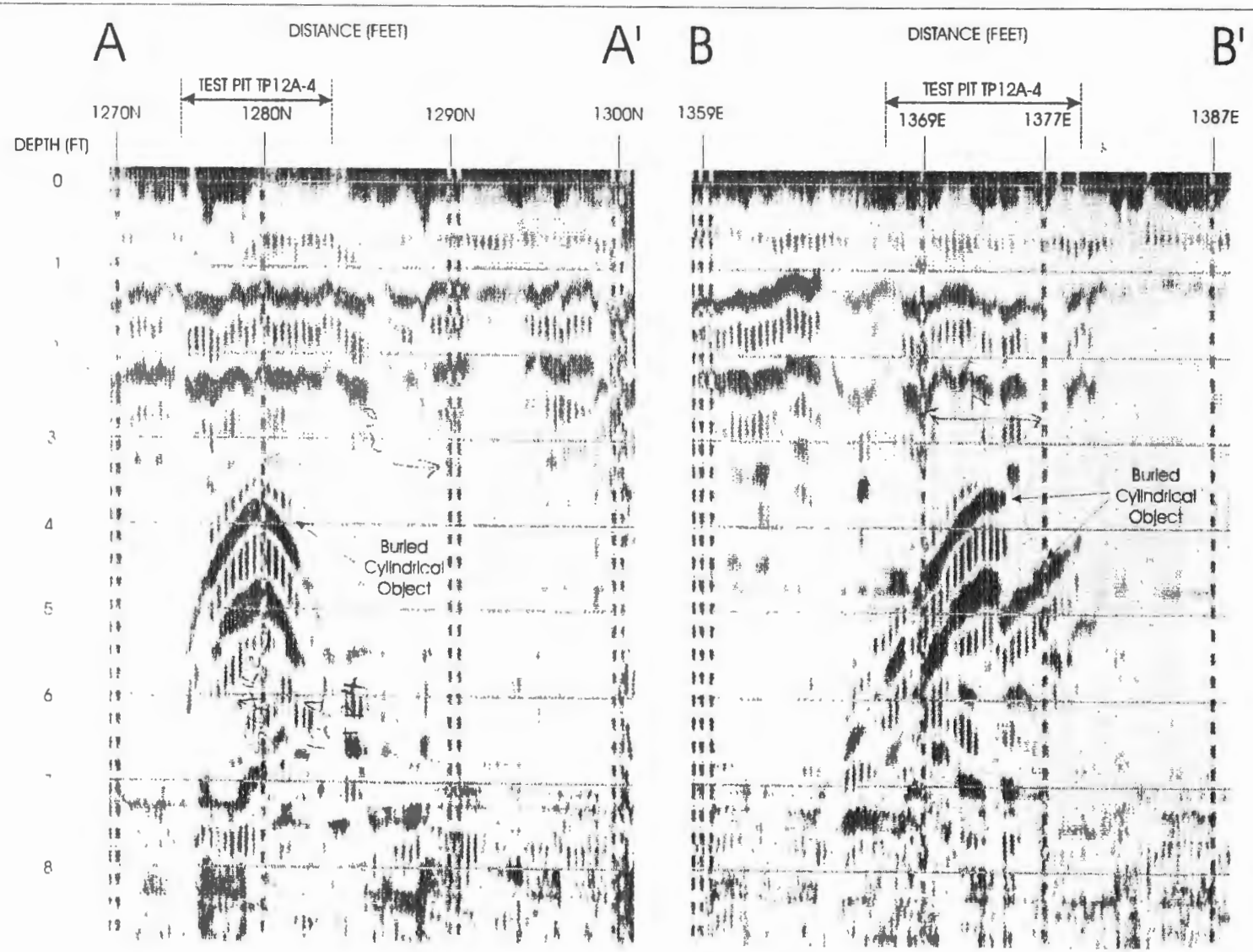
Site Status at SEAD-12

- √ Classified as an Area of Concern
- √ Finalization of Regulatory Comments in Progress
- √ Geophysical Survey Currently On-going


GUARD POST
CAIRO ROAD
APPROXIMATE AREA OF STRESSED VEGETATION
APPROXIMATE LOCATION OF DRY WASTE DISPOSAL PIT
APPROXIMATE LOCATION OF WASTEWATER STORAGE TANK 5000 GAL
BLDG 802
BLDG 803
BLDG 804
BLDG 805
BLDG 806
BLDG 807
BLDG 810
BLDG 812
SEAD12B
SEAD12A-1
SEAD12
L1160N
L1140N
L1100N
L1060N
L1020N
L1000N
L1880N
L1800N
L1700N
L1600N
L1500N
L1400N
L1300N
L1200N
L1100N
L1000N
L960N
L1180E
L1220E
L1260E
L1300E
SERVICE ROAD #1
UNNAMED CREEK
650'
N
LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
760
GROUND SURFACE ELEVATION CONTOURS
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/BR SIGNAL
OVERHEAD UTILITY POLE
SURVEY MONUMENT
L1200E
EM TRANSECT AND LINE NUMBER
47
100 0 100 200
(feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS SCOPING PROJECT
SEAD12 BUILDING 804 AND RADIOACTIVE BURIAL SITE
ENVIRONMENTAL ENGINEERING
728751-02001
FIGURE 3-3
LOCATION OF EM-31
GEOPHYSICAL SURVEYS
1" = 200'
AUGUST 1995




DISPOSAL PIT D
GUARD POST
PATROL ROAD
APPROXIMATE AREA OF STRESSED VEGETATION
APPROXIMATE LOCATION OF DRY WASTE DISPOSAL PIT
APPROXIMATE LOCATION OF WASTEWATER STORAGE TANK
5000 GAL.
BLDG 802
BLDG 803
BLDG 805
BLDG 864
BLDG 807
BLDG 808
BLDG 825
BLDG 810
BLDG 812
SEAD12B
SEAD12A-1
SEAD12A
SERVICE ROAD #1
UNNAMED CREEK
SERIES OF DISCONTINUITIES (DISPOSAL PIT?)
DISPOSAL PIT C
DISPOSAL PIT B
DISPOSAL PIT A
L1020N
L1000N
L1050N
L1100N
L1150N
L1200N
L1250N
L1300N
L1350N
L1400N
L1450N
L1500N
L1550N
L1600N
L1650N
L1700N
L1750N
L1800N
L1850N
N
LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/RR SIGNAL
OVERHEAD UTILITY POLE
SURVEY MONUMENT
LEGEND
GPR TRANSECT
GPR Record (shown in report)
DISPOSAL PIT AREA DEFINED BY GPR AND EM-31
AREA OF GPR ANOMALIES
GPR ANOMALY HAVING A HYPERBOLIC TYPE SIGNATURE
ZONE OF WEAK GPR SIGNAL RETURNS
100 0 100 200
(feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS SCOPING PROJECT
SEAD12 BUILDING 804 AND RADIOACTIVE BURIAL SITE
ENVIRONMENTAL ENGINEERING
726751-02001
FIGURE 3-8
LOCATION OF GPR SURVEYS AND GPR ANOMALIES
1" = 200'
AUGUST 1995
M:\AO\SENECA\RIFS\SD12\SD12GPR.DVG



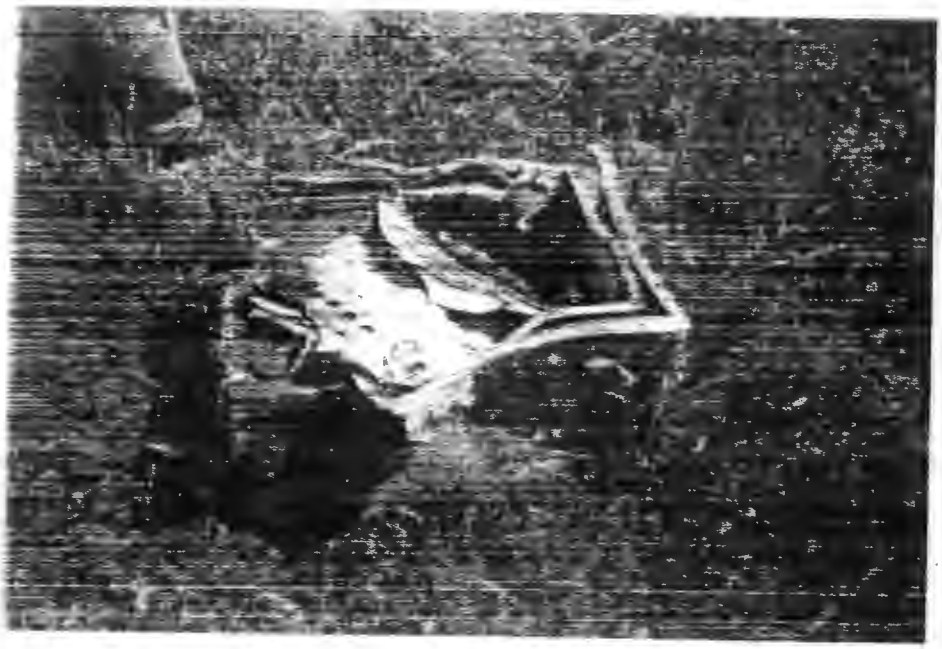
GPR Profile A-A', Perpendicular to Long Axis of Buried Cylindrical Objects

GPR Profile B-B' Parallel to Long Axis of Buried Cylindrical Objects.

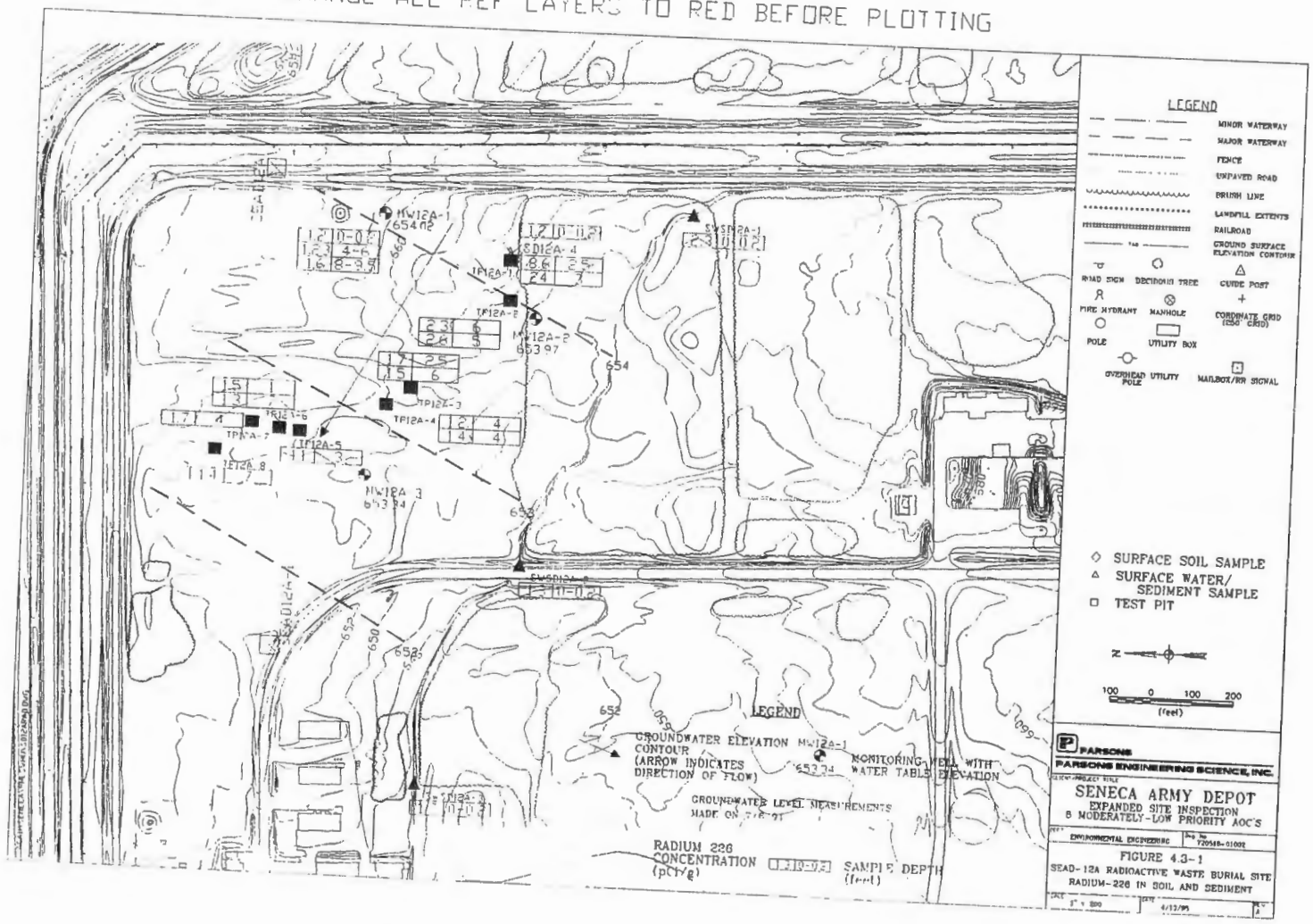
SENECA ARMY DEPOT A
SEAD 12
GPR PROFILES A-A' AND B-B'

ESI Test Pitting Activities

- √ Eleven Test Pits Excavated at SEAD-12, (8 at SEAD-12A and 3 at SEAD-12B)
- √ TP12A-1, TP12A-2, TP12A-3 and TP12A-4 contained various unknown components
- √ Elevated radiological readings were obtained in 2 to 4 foot zone at TP12A-1



CHANGE ALL PEF LAYERS TO RED BEFORE PLOTTING

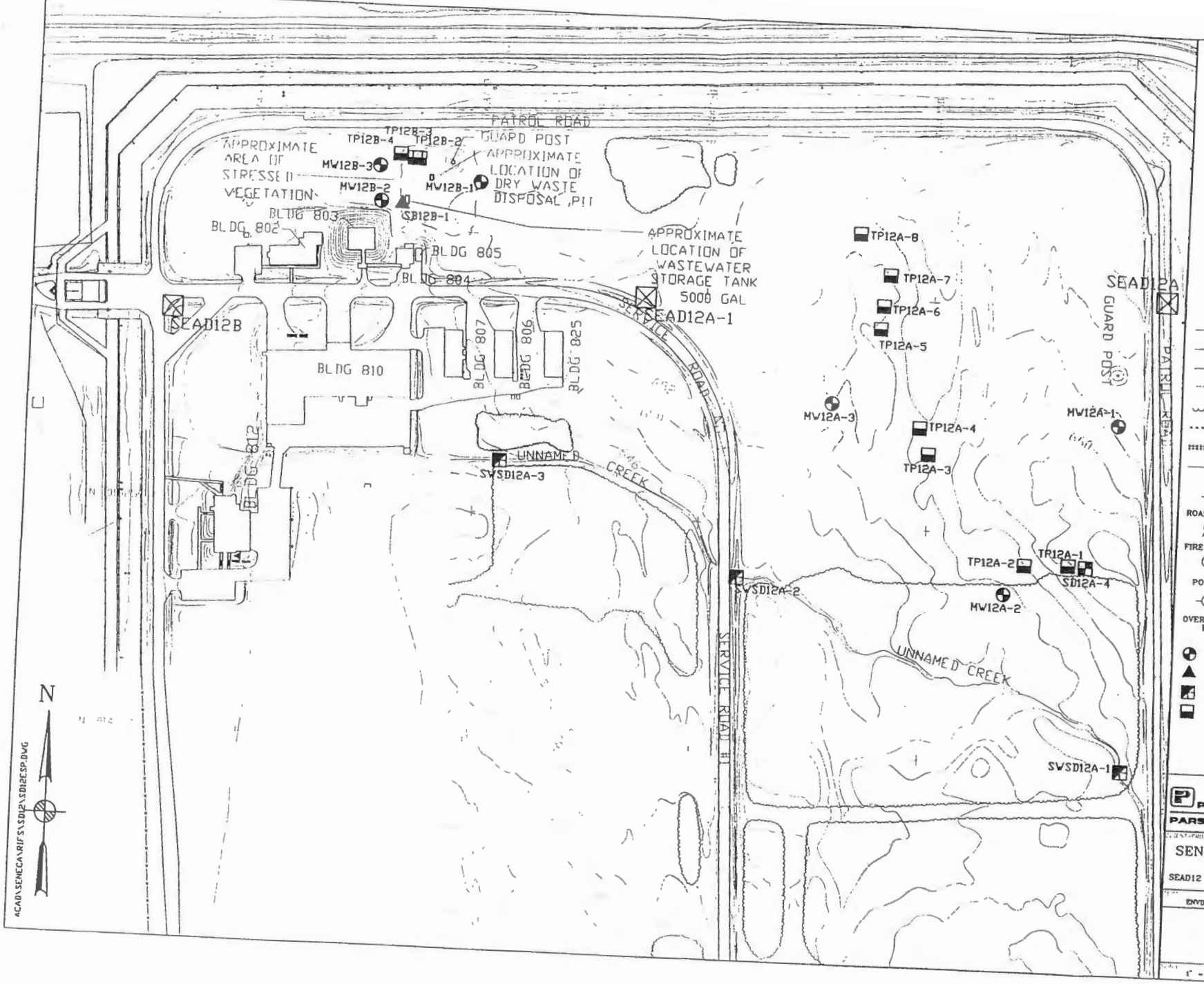


Soil Boring, Monitoring Wells and Surface Water/Sediment Sampling

- √ Seven Soil Borings Performed
- √ Six Monitoring Wells installed, (3 at SEAD-12A and 3 at SEAD-12B)
- √ Three Surface Water and Four Sediment Samples Collected

Soil Sampling Results from ESI

- √ Soil from TP12A-1 at 2.5 feet contained Radium 226 at 8.6 pCi/g (Including Background ~1.5 pCi/g)
- √ Soil from TP12A-1 at 3 feet contained Radium 226 at 24 pCi/g(Including Background ~1.5 pCi/g)
- √ Above the UMTRCA allowable value of 16.5 pCi/g for Subsurface Soils



ACAD\SENECA\RIFS\SD12\SD12ESP.DWG

PARSONS

PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
RI/FS SCOPING PROJECT
SEAD12 BUILDING 804 AND RADIOACTIVE BURIAL SITE

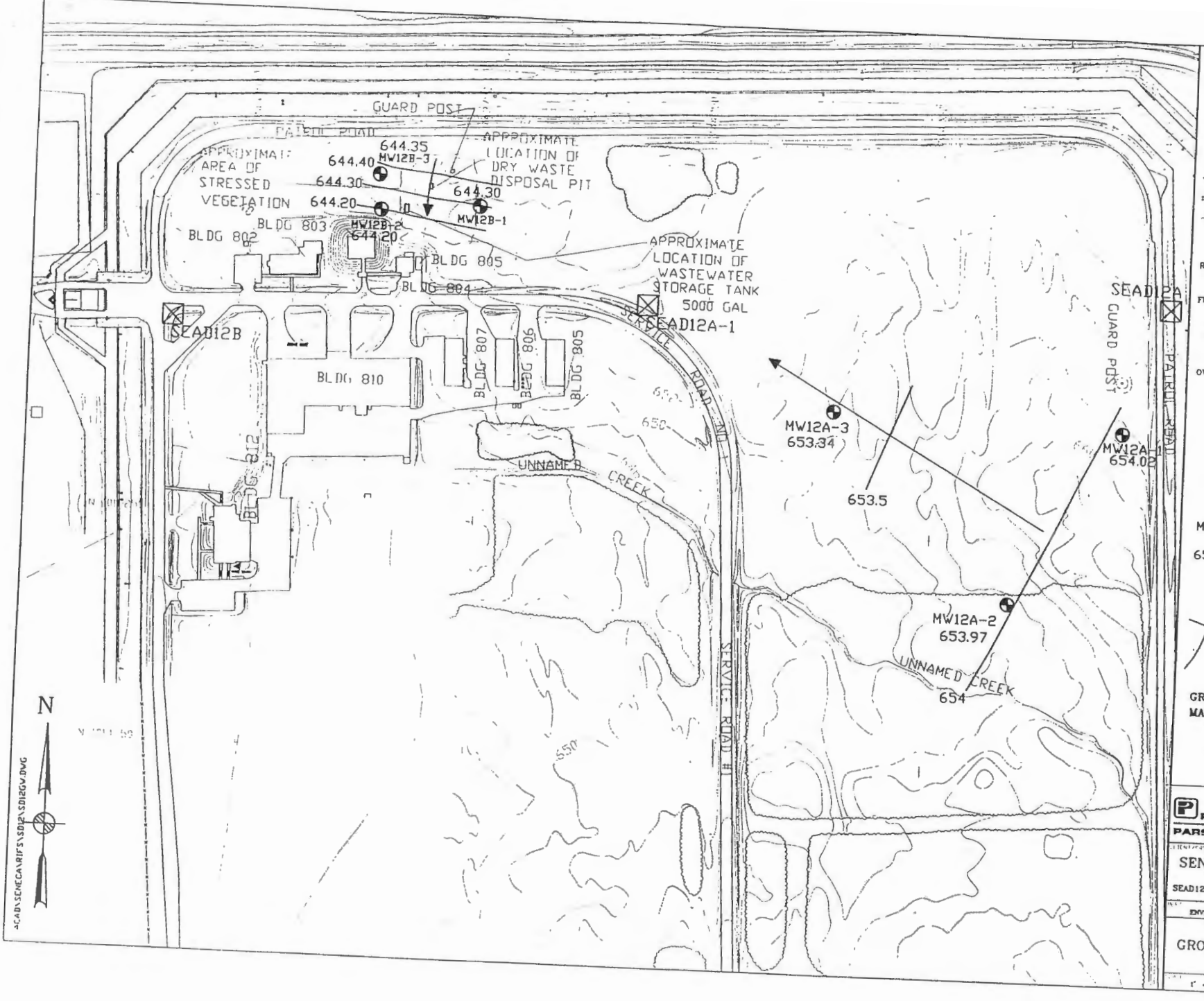
ENVIRONMENTAL ENGINEERING | 728751-07001

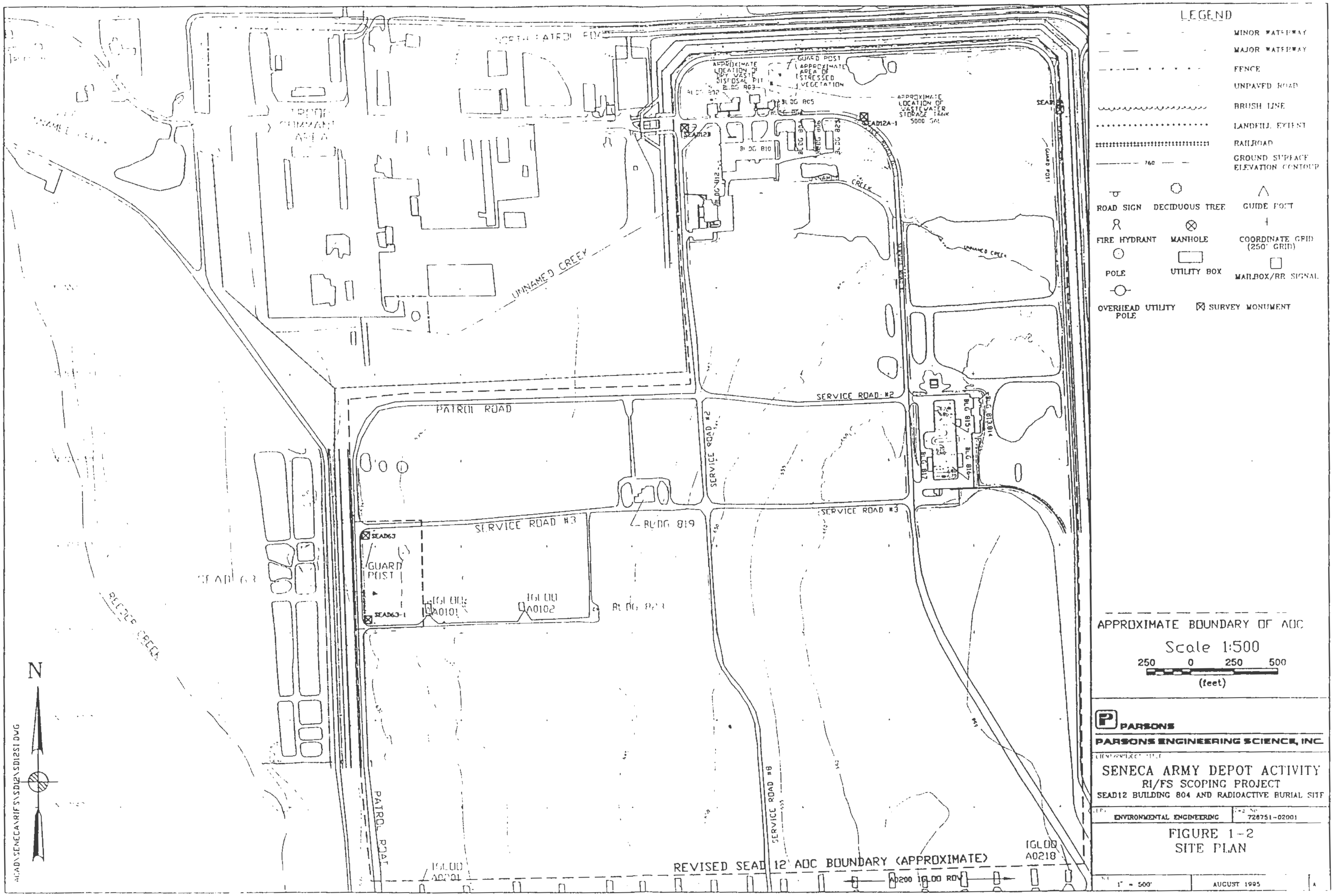
FIGURE 3-1
LOCATION OF ESI SAMPLING POINTS

1" = 200' | AUGUST 1995 | A

ESI Groundwater Results

- √ Gross Alpha at MW-12A-1 was measured at 15 pCi/L
- √ Gross Alpha at MW-12A-2 was measured at 38 pCi/L
- √ NY Class GA Groundwater Standards for Gross Alpha is 15 pCi/L


GUARD POST
PATROL ROAD
APPROXIMATE AREA OF STRESSED VEGETATION
644.35
MW12B-3
644.40
644.30
644.20
644.30
MW12B-1
MW12B-2
644.20
APPROXIMATE LOCATION OF DRY WASTE DISPOSAL PIT
BLDG 802
BLDG 803
BLDG 804
BLDG 805
APPROXIMATE LOCATION OF WASTEWATER STORAGE TANK 5000 GAL
SEAD12A-1
SEAD12B
BLDG 810
BLDG 807
BLDG 806
BLDG 805
SERVICE ROAD #1
650
UNNAMED CREEK
MW12A-3
653.34
653.5
MW12A-1
654.02
MW12A-2
653.97
654
550
N
LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
760
GROUND SURFACE ELEVATION CONTOUR
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/RR SIGNAL
OVERHEAD UTILITY POLE
SURVEY MONUMENT
LEGEND
MW12A-1
654.02
MONITORING WELL WITH WATER TABLE ELEVATION
654
GROUNDWATER ELEVATION CONTOUR (ARROW INDICATES DIRECTION OF FLOW)
GROUNDWATER LEVEL MEASUREMENTS MADE ON 7/25/94
7/6/94
100 0 100 200
(feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS SCOPING PROJECT
SEAD12 BUILDING 804 AND RADIOACTIVE BURIAL SITE
ENVIRONMENTAL ENGINEERING
728751-02001
FIGURE 3-11
GROUNDWATER ELEVATION MAP
1" = 200'
AUGUST 1995
4
ACAD\SENECA\RIFS\SD12\SD12GV.DWG


LEGEND
MINOR WATERWAY
MAJOR WATERWAY
FENCE
UNPAVED ROAD
BRUSH LINE
LANDFILL EXTENT
RAILROAD
GROUND SURFACE ELEVATION CONTOUR
ROAD SIGN
DECIDUOUS TREE
GUIDE POST
FIRE HYDRANT
MANHOLE
COORDINATE GRID (250' GRID)
POLE
UTILITY BOX
MAILBOX/RR SIGNAL
OVERHEAD UTILITY POLE
SURVEY MONUMENT
APPROXIMATE BOUNDARY OF AOC
Scale 1:500
250
0
250
500
(feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS SCOPING PROJECT
SEAD12 BUILDING 804 AND RADIOACTIVE BURIAL SITE
ENVIRONMENTAL ENGINEERING
726751-02001
FIGURE 1-2
SITE PLAN
1" = 500'
AUGUST 1995
GUARD POST
APPROXIMATE AREA OF STRESSED VEGETATION
APPROXIMATE LOCATION OF WASTEWATER STORAGE TANK 5000 GAL
BLDG 805
BLDG 810
SEAD12A-1
UNNAMED CREEK
SERVICE ROAD #2
PATROL ROAD
SERVICE ROAD #3
BLDG 819
GUARD POST
SEAD63
SEAD63-1
IGLOO A0101
IGLOO A0102
SEAD 63
SERVICE ROAD #8
IGLOO A0218
REVISED SEAD 12 AOC BOUNDARY (APPROXIMATE)
A0200 IGLOO ROW
N

SEAD-12 Radiological Surveys

Summary of work proposed in the SEAD-12 and SEAD-63 Draft Final Project Scoping Plan

General Approach to SEAD-12 Radiological Surveys

- Each distinct area of SEAD-12 will be classified as a Class One, Class Two, or Class Three Survey Unit
- Classification of survey units is based upon past operating history and a review of historical data
- Each Survey Unit will be compared to a background, or reference, site

Class One Survey Units

- Defined as areas or buildings where there are documented releases of radioactive materials or unsealed sources were present
- These areas have the potential to still contain residual radiation at levels that exceed an ARAR
- Class One Survey Units:
  - Buildings 803, 804, 805, 815, 816, 819
  - Disposal Pit A

Class Two Survey Units

- Defined as buildings or rooms where military items containing radioactive isotopes were stored and areas where disposal pits are suspected
- These areas have only a small potential to contain residual radiation, and if found, is expected to be present at concentrations that are below any ARARs
- Class Two Survey Units:
  - Buildings 806 (the calibration room only) , 810 (the loading and unloading room only), 812 (the weapons storage room and garage bay only), and SEAD-63
  - All Disposal Pits, except Disposal Pit A, identified by geophysical methods

Class Three Survey Units

- Defined as areas or buildings where there is no reason to expect that radioactive isotopes are present
- These areas have very little potential to contain any residual radiation, but lack sufficient data to recommend for unrestricted release
- Class Three Survey Units:
  - All remaining buildings and rooms
  - All remaining grounds

Gridding of Survey Units - Buildings

- Class One Survey Units
  - 2 meter by 2 meter below 2 meters and on all horizontal surfaces above two meters
  - 1 meter by 1 meter above two meters
- Class Two Survey Units
  - 2 meter by 2 meter below 2 meters
  - 1 meter by 1 meter above two meters
- Class Three Survey Units
  - 2 meter by 2 meter below 2 meters
  - 1 meter by 1 meter above two meters
- Discussed with and accepted by NYSDOH

Gridding of Survey Units - Grounds

- Class One Survey Units
  - 10 meter by 10 meter on all surfaces
- Class Two Survey Units
  - 10 meter by 10 meter on all surfaces
- Class Three Survey Units
  - 10 meter by 10 meter on pavement
  - Survey lanes, 2 meters wide, separated by approximately 15 meters

Scanning Surveys - Buidings

- Class One Survey Units
  - 100% alpha, beta, gamma below 2 meters
  - 10% alpha, beta, gamma above 2 meters, in randomly located 1 m^2 areas
- Class Two Survey Units
  - 100% alpha, beta, gamma below 2 meters
  - 10% alpha, beta, gamma above 2 meters, in randomly located 1 m^2 areas
- Class Three Survey Units
  - 10% alpha, beta, gamma
- Discussed with and accepted by NYSDOH

Scanning Surveys - Grounds

- Class One Survey Units
  - 100% alpha, beta, gamma on pavement
  - 100% gamma on grounds
- Class Two Survey Units
  - 100% alpha, beta, gamma on pavement
  - 100% gamma on grounds
- Class Three Survey Units
  - 10% alpha, beta, gamma on pavement
  - 10% gamma on grounds

Direct Measurements - Buildings

- All Survey Units
  - 1 alpha and 1 beta per grid block (2 meter by 2 meter below 2 meters, 1 meter by 1 meter above 2 meters) situated over area of highest scanning measurements
- Discussed with and accepted by NYSDOH

Direct Measurements - Grounds

- All Survey Units
  - One alpha and one beta per 10 meter by 10 meter grid block on pavement

Removable Radiation Surveys - Buildings

- All Survey Units
  - One gross alpha/gross beta per grid block
  - One Liquid Scintillation (LS) for Tritium per grid block
  - Both located in area of highest scanning measurement
- Discussed with and accepted by NYSDOH

Removable Radiation Surveys - Grounds

- All Survey Units
  - One gross alpha/gross beta per grid block on pavement

Exposure Rate Surveys - Buildings

- All Survey Units
  - One measurement per grid block (2 meter by 2 meter below 2 meters, 1 meter by 1 meter above 2 meters) situated in center of grid
- Discussed with and accepted by NYSDOH

Exposure Rate Surveys - Grounds

- Class One and Class Two Survey Units
  - One measurement per grid block (10 meter by 10 meter) situated in center of grid
- Class Three Survey Units
  - One at each of 45 surface soil sample and 47 sediment sample locations

Soil Sampling

- Class One Survey Units
  - One per 10 meter by 10 meter grid block
  - located at grid nodes if all scanning measurements are constant, otherwise located in the area of the highest scanning measurement
- Class Two Survey Units
  - 20 random locations per unit with biased samples over any high scanning measurements
  - Not to exceed a sampling density of one per 120 m^2
- Class Three Survey Units
  - 35 random locations
  - 10 biased locations

Sediment Samples

- Class Two Survey Units
  - 27 Biased sampling locations around Class One and Class Two Buildings and along Primary Drainage for Buildings 803, 804, 810, 815 and 816
- Class Three Survey Units
  - Twenty random locations
- Off Site, Downgradient of SEAD-12
  - 11 locations at low velocity locations between SEAD-12 boundary and Seneca Lake

Groundwater

- All Survey Units
  - One upgradient and at least 2 downgradient groundwater monitoring wells per known or suspected disposal pit

Disposal Pit Characterization

- At least 2 soil borings and 2 test pits per disposal pit
  - Two samples collected for laboratory analysis per location, additional samples collected and archived on an as-needed basis
- Photo records of disposal pit contents
- Full radiological and organic vapor screening of materials removed from each boring and test pit excavation

Reference Data - Buildings

- Building 722 for cement block structures
- Building 726 or 727 for metal structures
- Igloo C0912 for earth covered structures
- Surveyed as Class Two Survey Units to provide sufficient quantity of data for statistical comparisons

Reference Data - Grounds

- North Post baseball field for screening and surface soil data
- Six locations east and west of SEAD-12 boundary for surface soil, subsurface soil and ground water data
- One well at each of the OB Grounds, OD Grounds, and SEAD-57 for subsurface and groundwater data
- Ten surface water and sediment locations in up-gradient, off-site drainage ditches

MARSSIM
document

EPA
DOE
NRC
DOD

Restoration Advisory Board
Meeting Agenda

November 19, 1996

7:00	**Welcome** LTC Stephen W. Brooks Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
7:15	**Local Redevelopment Authority Reuse Plan** Pat Jones, Interim Executive Director Seneca Army Depot Local Redevelopment Authority
7:35	**Impact of LRA Reuse Plan on Environmental Sites** Mr. Michael Duchesneau, P.E. Project Manager, Parsons Engineering Science, Inc.
7:55	**Break**
8:10	**The Army BRAC NEPA Process** Mr. Stephen M. Absolom Army Co-chair/BRAC Environmental Coordinator
8:30	**Open Discussion**
9:00	**Adjourn**

MINUTES
RESTORATION ADVISORY BOARD
NOVEMBER 19, 1996 MEETING

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Carla Struble, U.S. Environmental Protection Agency

Government RAB Members Not Present:

Kamal Gupta, NYS Department of Environmental Conservation

Community RAB Members Present:

Dick Durst/Community Co-Chair, Anne Herman, Mary Ann Krupsak,
Richard Sisson, Al Legasse, Estelle Coleman, Henry Van Ness, Pat Jones

Community RAB Members Not Present:

Russell Miller, Richard Lewis, Carmen Serrett, Lucinda Sangree,
Frank Ives, Harold Kugelmass, Brian Dombrowski, David Wagner

Government and Technical Support Personnel Present:

Thomas Enroth, SEDA Engineering and Environmental Division
Janet Fallo, SEDA Engineering and Environmental Division
Susan Cooper, SEDA Secretary
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Mike Duchesneau, Parsons Engineering Science, Inc.
Keith Hoddinott, U.S. Army Environmental Center for Health Promotion and Preventive Medicine
Robert Scott, NYS Department of Environmental Conservation
Kevin Healy, U.S. Army Corps of Engineers, Huntsville Division

Others Present (from sign-in sheet):

Christopher Raddell, Community Member
Nellie Legasse, Community Member
Karl Bechler, Community Member
Neil Chaffie, Community Member

2. Stephen Absolom welcomed members and support staff to the November Restoration Advisory Board in the NCO Club, then delivered opening remarks, outlined the evening's agenda, and asked for introductions.

3. Minutes from October's RAB meeting were approved, signed, and accepted into record.

4. Pat Jones, Interim Director of the Local Redevelopment Authority (LRA), briefed the RAB on the SEDA Reuse Plan. Included in Seneca's redevelopment were goals; alternatives; development areas; land use suitability; buildings and facilities location, use, evaluation, and current conditions; and property acquisition. The LRA has plans to sell the Lake Housing area as a whole for a one-time purchase price and use the proceeds to upgrade and improve the PID for resale. Ms. Jones identified several notices of interest for various areas of the depot and mentioned that the window of opportunity was still open for a couple more months. Issues raised during this presentation follow:

a. The availability of the Study/Reuse Plan to the public was addressed. A copy of this document can be reviewed at the County Office Building or at the LRA office by calling ahead for an appointment.

b. A concern was raised regarding community objections for an area's specific use and whether these objections would be heard. In this case, the LRA would try to work with the community through a public forum.

5. Mike Duchesneau's presentation covered Future Land Use and Cleanup and the impact of these decisions on the remediation process. Future land use is divided into six specific areas: Conservation/Recreation, Housing/Residential, Institutional, Office/Industrial, Special Events, and Training Ranges. Specific sites were identified within the land use areas as well as exposure scenarios and impacts on cleanup goals. Issues raised during Mr. Duchesneau's presentation follow:

a. The possibility of sampling harvested deer livers for contamination was discussed. This issue has been considered, however it would not necessarily point out any specific area where contamination could have been ingested due to herds traveling in different areas of the depot.

b. Differences between types and numbers of species from inside and outside the depot was questioned. Mr. Duchesneau stated that mammals from the OB Grounds and fish from Reeder Creek were collected and sent to a lab for monitoring. There did not appear to be any significant disparity.

c. Asked whether asbestos and lead-based paint sampling had been done on post, the RAB was assured that all areas are being identified and readied for reuse.

d. A comment was made concerning possible contamination of the depot related to the perceived elevated levels of cancer in the surrounding communities. Out of approximately 10,600 acres of land, 9,100 acres are uncontaminated and can be transferred immediately. The Department of Health offered to provide information concerning cancer rates.

6. Stephen Absolom then showed a video on NEPA, the National Environmental Policy Act, and further explained areas of importance. Typical areas for analysis were identified and opportunities for public involvement were addressed. The NEPA manuals are available for review in the County Office Building and in the LRA office.

7. General discussion followed with a suggestion to include an Ecological Risk Assessment Presentation as a possible topic for a future meeting.

8. Mr. Absolom offered the option of canceling the December RAB meeting due to the busy holiday season. A vote showed all in favor. The next Restoration Advisory Board meeting will be held on January 21, 1997 at 7:00 p.m. at the SEDA NCO Club.

9. The meeting was adjourned at 9:25 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

LRA REUSE

BRIEFING

for

RESTORATION ADVISORY BOARD

November 19, 1996

Presented by: Patricia Jones
Interim Executive Director
LRA

Redevelopment Goals

Seneca Army Depot Reuse Plan

- New Employment Opportunities
- Fiscally Responsible and Prudent
- Provide Incentives to Private Sector
- Focus on Portions of the Site that Offer Potential for Success

Redevelopment Goals (continued)

Seneca Army Depot Reuse Plan

- Work to Establish Wildlife Conservation Area
- Encourage Involvement of the State of New York
- Encourage Effective and Efficient Environmental Clean-up

DEVELOPMENT CONSIDERATIONS

- Range of development options
- Some options will involve risk and be expensive
- Development choices
  - Focus on the entire site or just on portions of the site?
  - Amount of local government funding?
  - Role of local government in the management of redevelopment efforts?

DEVELOPMENT ALTERNATIVES

- Housing development provides best opportunity for redevelopment
- Warehouse/distribution usage is possible - cold storage
- Some opportunity for manufacturing -south end
- Office development is viable use - information/back office
- Aviation potential is limited
- Institutional usage in north end
- Several opportunities for recreational development
- Agricultural production may be limited due to cost of clearance

Development Areas

Seneca Army Depot Reuse Plan

- Conservation Land
- Lake Housing
- Elliot Acres Housing
- Federal Uses

Development Areas (continued)

Seneca Army Depot Reuse Plan

- Aviation/Special Events
- Institutional
- Warehouse/Storage
- Planned Industrial Development
- Training Ranges

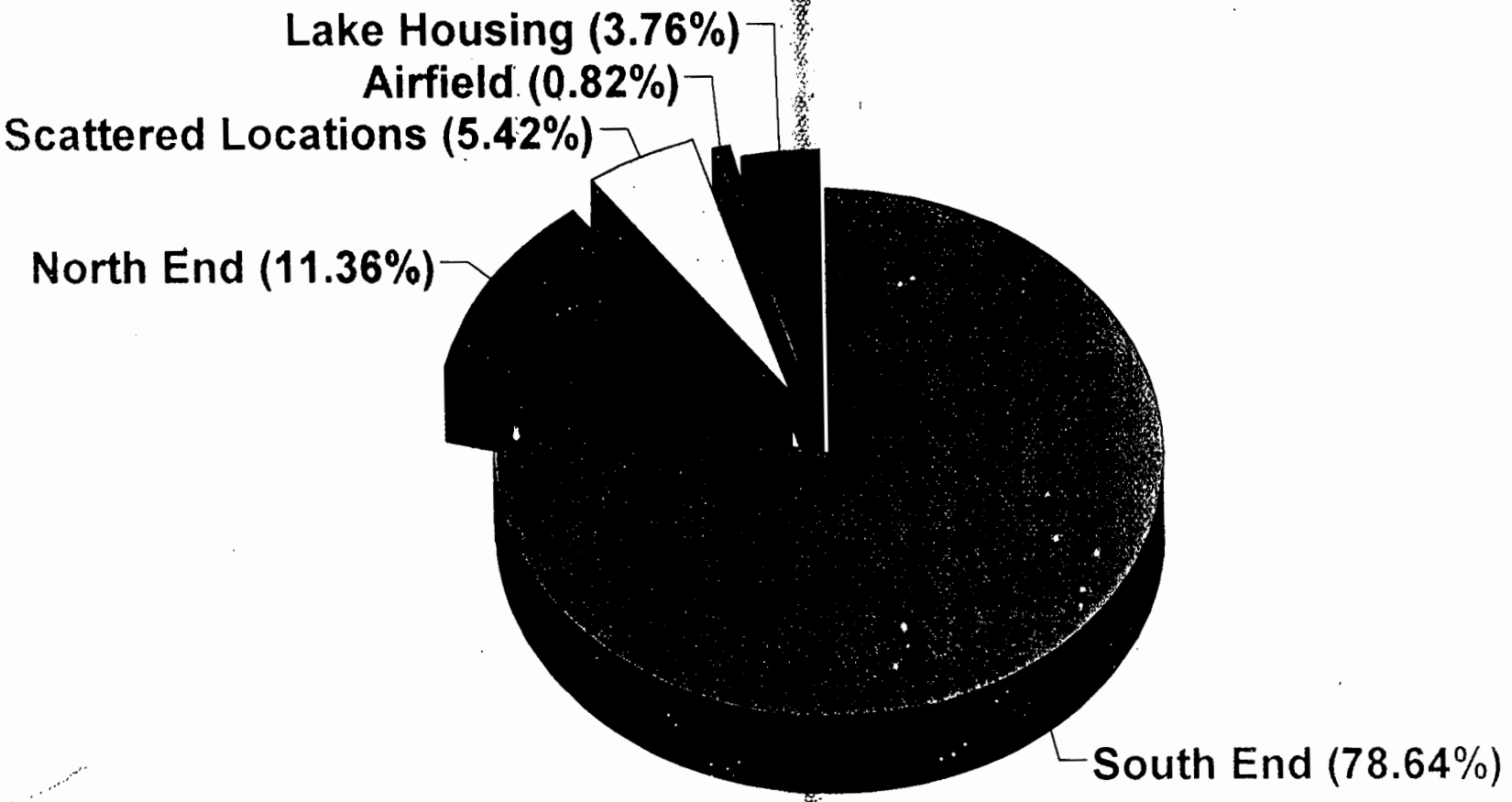
LAND USE SUITABILITY

- 10,634± acres at site
- 300 acres proposed for transfer to the U.S. Coast Guard
- 2,197 acres identified with environmental constraints
- 525 acres represent Airfield Clear Zone
- Net usable area - 7,612 acres
- Current layout of utilities only service a small portion of property available for transfer

BUILDINGS AND FACILITIES

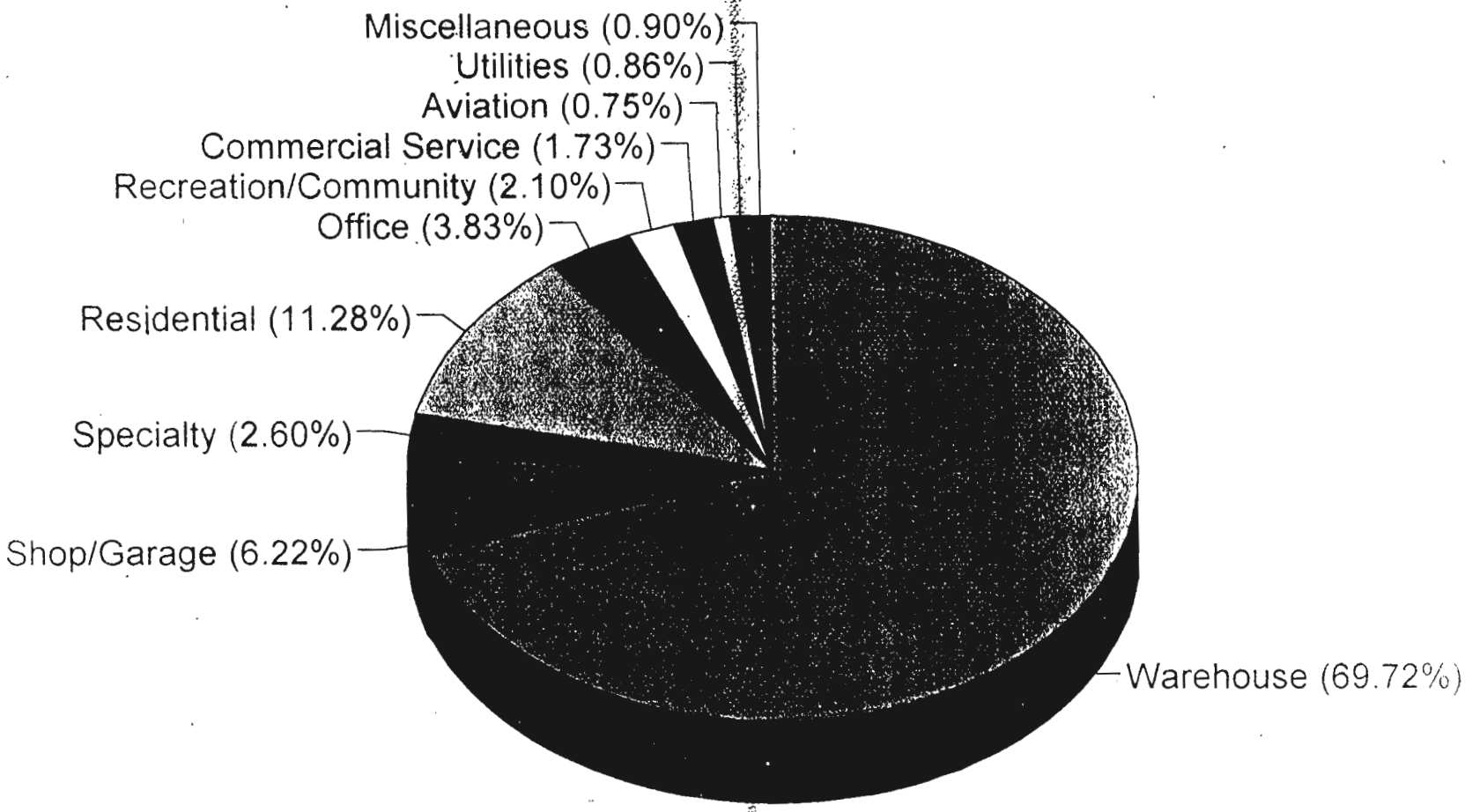
- Diversified Inventory of 365 buildings containing 3.72 million SF. This does not include the 519 Igloos
- A majority of the buildings are contained in the South End (79%)
- Nearly all the buildings in the North End have been vacant since 1993

Seneca Army Depot
Building Distribution by Location



Total Building Area:
3.725 Million SF
(Not including Igloos)

Seneca Army Depot
Building Distribution by Existing Use



Total Building Area:
3.725 Million SF
(Not including Igloos)

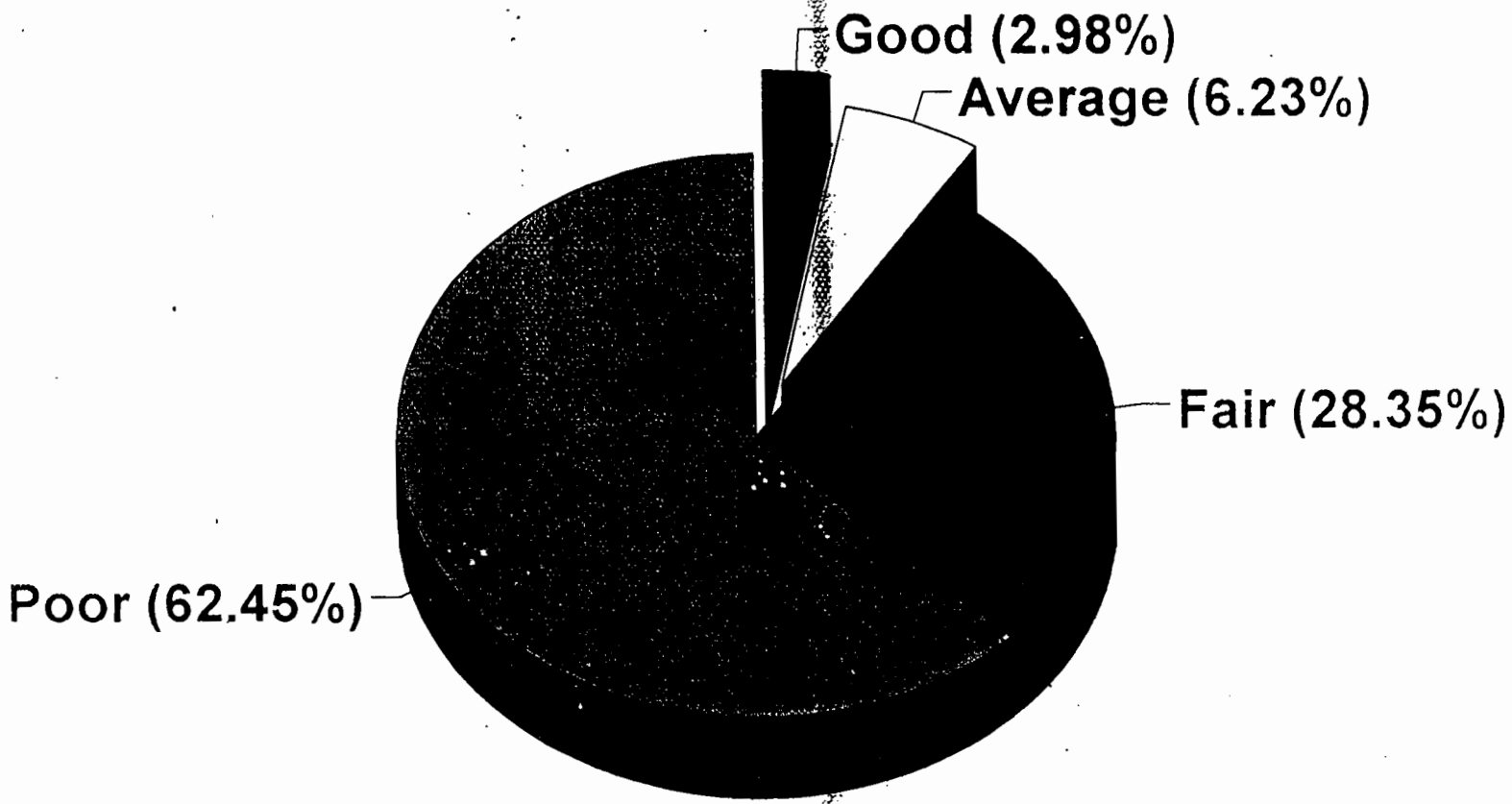
BUILDINGS AND FACILITIES

- Building reuse could include industrial, assembly, warehouse, office and R&D
- Housing
  - Elliot Acres - Variety of unit types, but rehabilitation will be required
  - Lake Housing - Marketable condition

BUILDING EVALUATION

- Building Evaluation involved variety of factors: design, layout, age, type of material, specialty features, utilities, existing mechanicals, overall functional utility
- Building Terms
  - Good - Appears readily adaptable to market with minimal cost
  - Average - Potentially marketable with minor investment
  - Fair - Modernization and renovation required
  - Poor - Significant investment required to replace/modernize mechanicals or structural items

Seneca Army Depot
Current Conditions of Buildings



Total Building Area:
3.69 Million SF
(Not including Igloos
and Small Buildings)

BUILDINGS AND FACILITIES

- Warehouse facilities tend to be in the poorest condition
- Office properties are in better condition
- Number of specialty buildings are in good condition, but they are in isolated locations

PROPERTY ACQUISITION

- Recommend that PID and Lake Housing Area be acquired by local officials under a Rural Economic Development Conveyance.

- Recommend that other sites be acquired by regional and state agencies under a Public Benefit Conveyance or private organizations under Negotiated/Bid Sale.

- Recommend that the LRA continue operations for the next three to four years to complete planning activities and assist in the property transfer process.

- Recommended that development and marketing of PID and Lake Housing areas be undertaken by the Seneca County IDA.

PROPERTY ACQUISITION

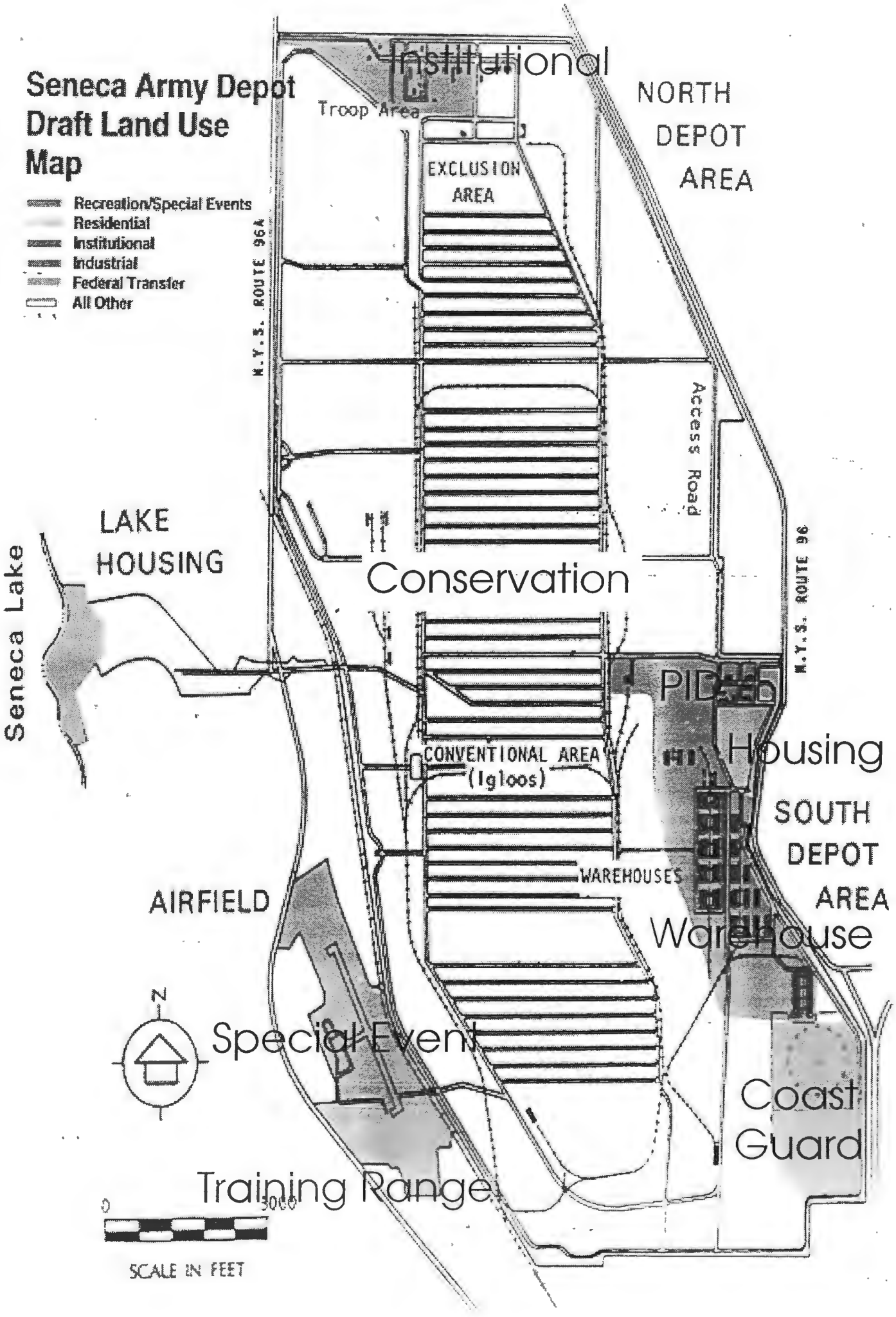
Continued

- Recommend that the LRA request a partial EIS, Record of Decision and Finding of Suitability to Transfer for the PID and Lake Housing areas.

- Recommend that the LRA/IDA solicit interest from developers for Lake Housing Area in late 1997 early 1998. Target transfer date for this property is Spring/Summer 1998.

- Recommend that proceeds from the sale of Lake Housing be dedicated to operation, maintenance, marketing and capital improvements in the PID area.

- If Lake Housing Area cannot be acquired through no-cost EDC, and re-sold to support the reuse of PID area, the community should be prepared to walk away from ownership of any property at the Depot.


Seneca Army Depot
Draft Land Use
Map
Recreation/Special Events
Residential
Institutional
Industrial
Federal Transfer
All Other
Institutional
Troop Area
NORTH
DEPOT
AREA
EXCLUSION
AREA
N.Y.S. ROUTE 96A
Access Road
N.Y.S. ROUTE 96
LAKE
HOUSING
Seneca Lake
Conservation
PID
Housing
CONVENTIONAL AREA
(Igloos)
SOUTH
DEPOT
AREA
WAREHOUSES
AIRFIELD
Warehouse
N
Special Event
Coast
Guard
Training Range
0
3000
SCALE IN FEET

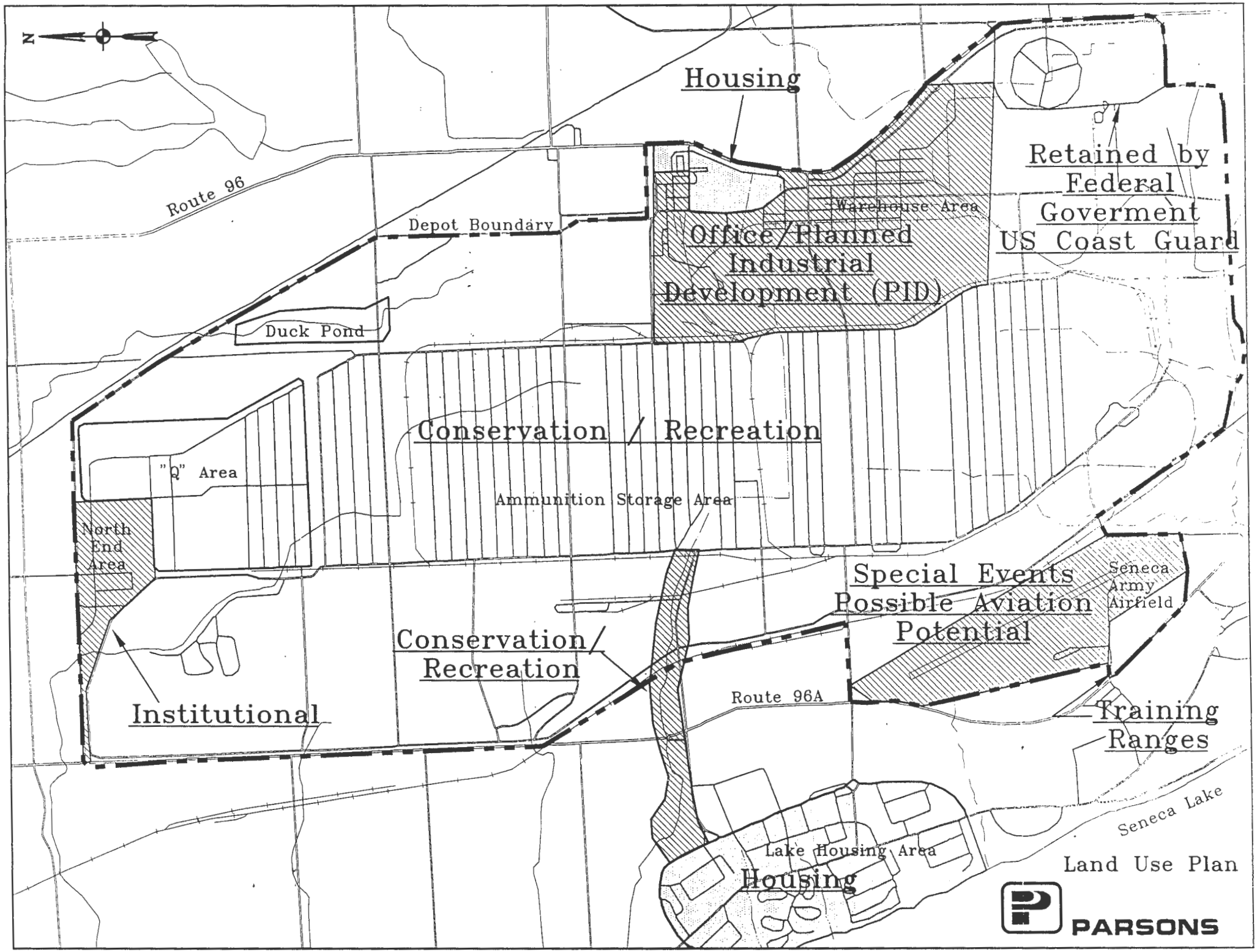
Presentation to the RAB

November 18, 1996

Future Land Use and Clean-up

cal Redevelopment Authority (LRA) Future Land Uses

- Conservation/Recreation
- Housing/Residential
- Institutional
- Office/Industrial
- Special Events
- Training Ranges


N
Housing
Retained by Federal Goverment US Coast Guard
Route 96
Depot Boundary
Warehouse Area
Office/Planned Industrial Development (PID)
Duck Pond
Conservation / Recreation
"Q" Area
Ammunition Storage Area
North End Area
Special Events Possible Aviation Potential
Seneca Army Airfield
Conservation/ Recreation
Route 96A
Institutional
Training Ranges
Seneca Lake
Lake Housing Area
Housing
Land Use Plan
PARSONS

ture Land Uses and tes within the Land Use Areas

- Conservation/Recreation (8300 Acres)
  - Ammunition Storage Areas
  - Special Weapons "Q" Area (SEAD-12)
  - "Duck Pond" Area (SEAD-13, IRFNA Site)
  - Kendaia Creek & Reeder Creek
  - OB/OD Grounds (SEADs-23 & 45)
  - Ash Landfill (SEADs-3, 6, 8,14 & 15)

nd Uses and
posure Scenarios

Conservation / Recreational

- *Site Visitor*
  - *Bird Watcher*
  - *Hiker*
  - *Hunter*
- *Ecological Exposure*
  - *Small Mammals*
  - *Birds that Ingest Soil*

ture Land Uses and tes within the Land Use Areas

- Housing/Residential
  - Lake Housing (120 Acres)
  - Elliot Acres Housing (80 Acres)
  - No SWMUs in these Areas
  - Residential Exposure will not be Considered at any Site

...ture Land Uses and ...tes within the Land Use Areas

- Institutional
  - North End Area (200 Acres)
    - No Active Investigations
    - Six (6) Sites Within the North End
      - Four (4) No Action Sites
      - Two (2) Sites to be Addressed
  - Risk Assessments are not Anticipated for these Sites

...ture Land Uses and ...tes within the Land Use Areas

- Office / Industrial
  - Main Administration Area (620 Acres)
    - Twenty-six (26) Sites are Located in this Area
    - Ten (10) Sites are No-Action Sites
    - SEADs-16 & 17, Deactivation Furnaces
    - SEADs-25 & 26, Fire Training Areas
    - SEADs-5, 59 & 71, Former Fill Areas
    - Nine (9) Sites to be Addressed

nd Uses and
posure Scenarios

- Industrial Exposure Scenarios
  - Current Site Worker
  - Future Industrial Worker
  - Future On-site Construction Worker
  - Future Site Trespasser
- Ecological Exposure Scenarios
  - Small Mammals Living On-Site
  - Birds that Visit Site & Ingest Soil

ture Land Uses and tes within the Land Use Areas

- Special Events Area
  - Seneca Airfield (450 Acres)
  - No SWMUs in this Area
- Training Range Area
  - Firearms Training Ranges Area (50 Acres)
  - No SWMUs in this Area

nd Uses, Exposure Scenarios d Impacts on Clean-up Goals

- *Residential Exposure Results in Greatest Exposure and Lowest Clean-up Goals*
- *Industrial & Conservation Exposure Results in Higher Clean-up Goals as Exposure is Less*
- *Ecological Protection Can Result in Lower Clean-up Goals*

SENECA ARMY DEPOT ACTIVITY

ENVIRONMENTAL IMPACT STATEMENT

November 19, 1996

NATIONAL ENVIRONMENTAL POLICY ACT

(Public Law 91-190)

A federal law that requires

the identification and analysis of potential environmental effects

of certain proposed federal actions and alternatives

before those actions take place.

A "full disclosure" law with provisions for

public access to and public participation in

the federal decision making process.

REFERENCES & AUTHORITIES

- National Environmental Policy Act of 1969
  (Public Law 91-190; 42 United States Code 4321-4347)

- Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act
  (40 Code of Federal Regulations 1500-1508)

- Army Regulation 200-2

- Defense Base Closure and Realignment Act of 1990 (BRAC)
  (Public Law 101-510)

ENVIRONMENTAL IMPACT STATEMENT STEPS

Identify issues to be analyzed (scoping)

Clearly define proposed action and alternatives

Gather data, analyze potential impacts, consider mitigation

Prepare Draft EIS - make available for agency and public review

Prepare Final EIS - make available for agency and public review

Prepare Record of Decision - make available for agency and public review

TYPICAL AREAS FOR ANALYSIS

Land Use
Air Quality
Noise
Water Resources
Geology
Infrastructure
Hazardous and Toxic Materials
Permits and Regulatory Authorizations
Biological Resources and Ecosystems
Cultural Resources
Environmental Justice
Sociological Environment
Economic Development
Installation Agreements

HAZARDOUS AND TOXIC MATERIALS

NEPA DECISION MAKING

POTENTIAL ENVIRONMENTAL EFFECTS OF LEASING, TRANSFER, AND SUBSEQUENT USE

CERCLA DECISION MAKING

MOST APPROPRIATE REMEDIAL MEASURES TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

Environmental effects analysis - the NEPA process

Restoration of hazardous waste sites - the cleanup process

Replacement of jobs/creation of new jobs - the reuse planning process

SEAD-03-036

MINUTES
RESTORATION ADVISORY BOARD
FEBRUARY 18, 1997 MEETING

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health

Government RAB Members Not Present:

Kamal Gupta, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Community RAB Members Present:

Dick Durst/Community Co-Chair, Anne Herman, Richard Sisson, Henry Van Ness, Pat Jones, Brian Dombrowski, Harold Kugelmass

Community RAB Members Not Present:

Russell Miller, Richard Lewis, Carmen Serrett, Lucinda Sangree, Mary Ann Krupsak, Al Legasse, Estelle Coleman, Frank Ives, David Wagner

Government and Technical Support Personnel Present:

Thomas Enroth, SEDA Engineering and Environmental Division
Janet Fallo, SEDA Engineering and Environmental Division
Susan Cooper, SEDA Secretary
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Joanne Ogden, SEDA Legal Rep/Public Affairs Officer
Jerry Whitaker, SEDA Base Transition Coordinator
Mike Duchesneau, Parsons Engineering Science, Inc.
Robert Scott, NYS Department of Environmental Conservation
Dorothy Richards, U.S. Army Corps of Engineers, Huntsville Division
Jeff Waugh, U.S. Army Environmental Center

Others Present (from sign-in sheet):

Heather Clark, Community Member
Joanne Howard, Community Member
Neil Chaffie, Community Member
Sandra Tersegno, Community Member
Gerry DeCuollo, Community Member

2. Stephen Absolom welcomed members and support staff to the February Restoration Advisory Board in the NCO Club, outlined the evening's agenda, and asked for introductions.

3. Minutes from January's RAB meeting were approved, signed, and accepted into record.

4. A presentation on the Ash Landfill Remedial Alternatives was given by Stephen Absolom. A discussion was held on the Tables showing the preferred alternatives for remediation.

a. Table 1, Source Control, Option 5--Removal to an Off-Site Landfill: A concern was raised as to adequate recordkeeping at off-site landfills to know what materials are contained therein. It was explained that landfills can only take certain types of debris--you must prove the material you are landfilling before they can accept it. Landfills monitor and maintain records as required by State regulations.

b. Table 2, Migration Control, options were discussed: Option MC2--Alternate Water Source with Natural Attenuation of Plume and MC3a--Funnel-and-G with Zero Valance Iron are being considered as the preferred alternatives and are cost effective. The element of time was discussed as a consideration for remedial action. It is a variable that must be considered when discussing alternatives. When asked if there was any indication that the plume was still moving, Mr. Duchesneau stated that the plume is basically staying the same. RAB members were largely undecided in choosing one or the other alternative. Time for completion of remediation needs to be considered with, but not a critical consideration, in determining the preferred alternative.

5. Michael Duchesneau gave a briefing on the Open Burning Grounds Proposed Plan. His briefing included the background of the site, summary of the remedial investigation, remedial action objectives, and the remedial alternatives. The preferred alternative is off-site disposal of the 18,000 cubic yards of soils and sediments after excavation and solidification of materials above the toxicity levels. This alternative has good implementability as excavation and disposal is proven technology and readily available as well as the most cost effective.

a. A request was made to explain how soil volume is determined. It was explained that using the lead criteria of no more than 500 parts per million for presence of lead, material over the limits would be excavated and removed. After removal, 6 to 9" of material is placed over the area, graded, etc.

b. A discussion regarding the presence of small amounts of unexploded ordnance at the OB Grounds indicated that any UXO would be removed by a contractor by hand sorting and sifting, a highly specialized process.

c. The subject of landfills and available space showed that Seneca Meadows, Ontario County Landfill, and High Acres have an abundance of space due to extensive recycling

efforts in the area. Seneca Meadows has possible use for the excavated material as daily cover. The type of material the depot needs to landfill off-site is good, solid material which Seneca Meadows will accept.

6. A date for the Open Burning Grounds Public Meeting was unable to be scheduled as the regulators are still reviewing the documents.

7. Open discussion followed with two :

a. A suggestions for a future meeting topic was Money--how we receive it, including the timeframe and how we program and receive funds.

b. Due to a high incidence of absenteeism at recent RAB meetings, RAB membership needs to be addressed. The Charter will be reviewed with action following.

8. The next Restoration Advisory Board meeting will be held on March 18, 1997 at 7:00 p.m. in the SEDA NCO Club.

9. The meeting was adjourned at 9:30 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

SEAD-03-0316

Presentation to the Restoration Advisory Board

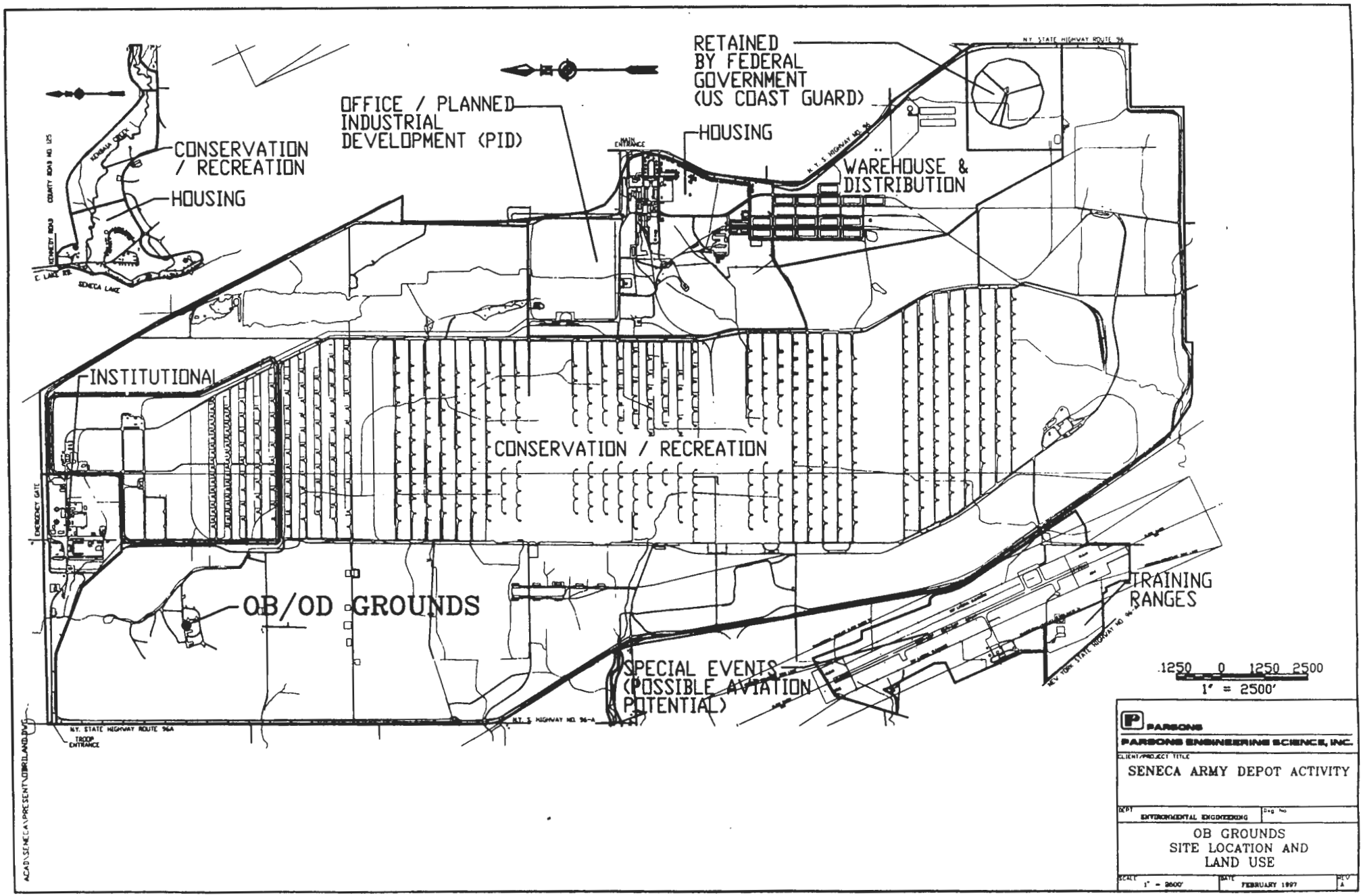
February 18, 1997

Proposed Remedial Action Plan (PRAP) for the OB Grounds

Topics for Tonight's Presentations

- Background of the OB Grounds Site
- Remedial Investigation (RI) Summary
- Remedial Action Objectives
- Remedial Alternatives
- Preferred Alternative

Background of the OB Grounds



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY

DEPT ENVIRONMENTAL ENGINEERING | Dwg No

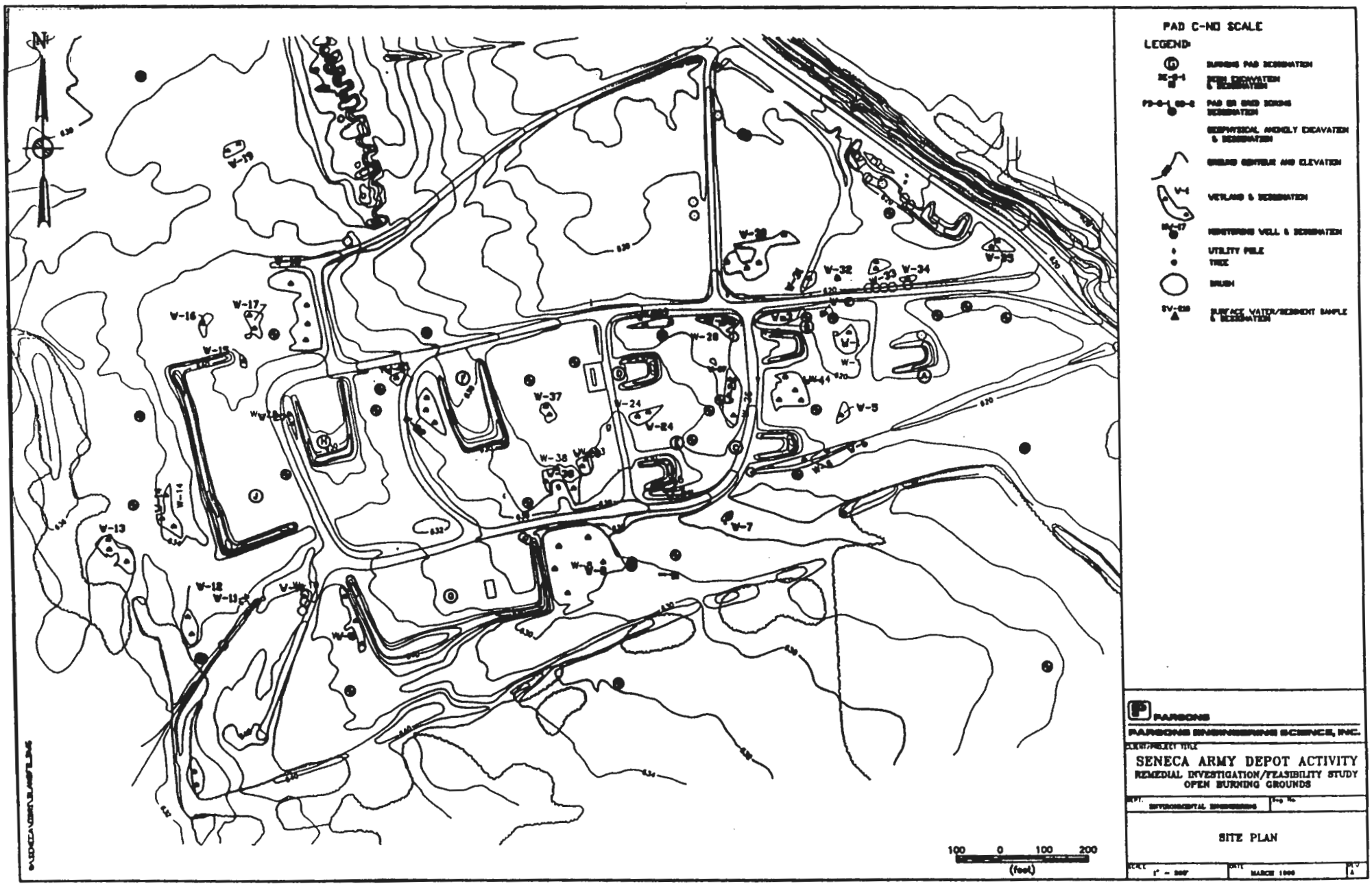
OB GROUNDS
SITE LOCATION AND
LAND USE

SCALE 1" = 2500' | DATE FEBRUARY 1997 | REV A

ACAD\SENECA\PRESENT\OBGRLAND.DWG

Open Burning (OB) Grounds Site Background

- Operated as Munitions Destruction Area, under Interim Status Provisions of RCRA
- Munitions were burned on 9 Pads
- Preliminary investigations identified burning residues in mid-1980's
- From 1987, burning was performed in 40 Ft. Aboveground Steel Tray
- Identified as a SWMU, SEAD-23
- One of the first RIs performed under CERCLA


PAD C-NO SCALE
LEGEND
BURNING PAD DESIGNATION
PIPE EXCAVATION & DESIGNATION
PAD OR GRID BORING DESIGNATION
GEOPHYSICAL ANOMALY EXCAVATION & DESIGNATION
GROUND CONTOUR AND ELEVATION
WETLAND & DESIGNATION
MONITORING WELL & DESIGNATION
UTILITY POLE
TREE
BRUSH
SURFACE WATER/SEDIMENT SAMPLE & DESIGNATION
W-19
W-16
W-17
W-15
W-14
W-13
W-12
W-11
W-10
W-9
W-8
W-7
W-6
W-5
W-4
W-3
W-2
W-1
W-24
W-28
W-30
W-32
W-33
W-34
W-35
W-37
W-38
100 0 100 200
(feet)
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS
ENVIRONMENTAL ENGINEERING
SITE PLAN
1" = 200'
MARCH 1990

Summary of the Remedial Investigation (RI) at the OB Grounds

PARSONS ENGINEERING SCIENCE

abcdefghijklmnopqrstuvwxyz

Milestones of the RI/FS Process

- Initiated Fieldwork December, 1991
- Completed Fieldwork June, 1994
- Remedial Investigation (RI) Report
  - Final on September 9, 1994
- Feasibility Study (FS) Report
  - Final on December 12, 1996
- Project Remedial Action Plan (PRAP)
  - Draft-final on January 15, 1997

Remedial Investigation Field Tasks Summary

- 88 Soil Borings & 106 Soil Excavations
- 35 Groundwater Monitoring Wells
  - 2 Rounds of Groundwater Sampling
- 29 Surface Water and Sediment Samples
- Ecological Survey
  - Aquatic Sampling in Reeder Creek
  - Terrestrial Study

HUMAN HEALTH RISK ASSESSMENT
OPEN BURNING GROUNDS
EXPOSED POPULATIONS

- Current Land Use Scenarios
  - Off-Site Residential
  - On-Site Worker
- Future Land Use Scenario
  - On-Site Residential

Remedial Action Objectives (RAO)

Remedial Action Objectives
OB Grounds

- Prevent Hazards from Unexploded Ordnance
- Eliminate Exposure from Lead in Soils > 500 mg/kg
- Protect Ecological Exposure from Lead in Soils > 60 mg/kg
- Eliminate Aquatic Exposure from Sediment >16 mg/kg for Copper & 31 mg/kg for Lead in Reeder Creek
- Prevent Surface Water Runoff
- Monitor Effectiveness and Compliance with ARARs in Groundwater and Sediments in Reeder Creek

Summary of Remedial Alternatives

Threshold Criteria

- *Protectiveness of Human Health and the Environment*
- *Compliance with Applicable, Relevant and Appropriate Requirements (ARARs)*

Primary Balancing Criteria

- *Long Term Effectiveness and Permanence*
- *Reduction of Toxicity, Mobility and Volume through Treatment*
- *Short Term Effectiveness*
- *Implementability*
- *Cost*

Modifying Criteria

- *Acceptance with State and Local Community*

Summary of Remedial Alternatives

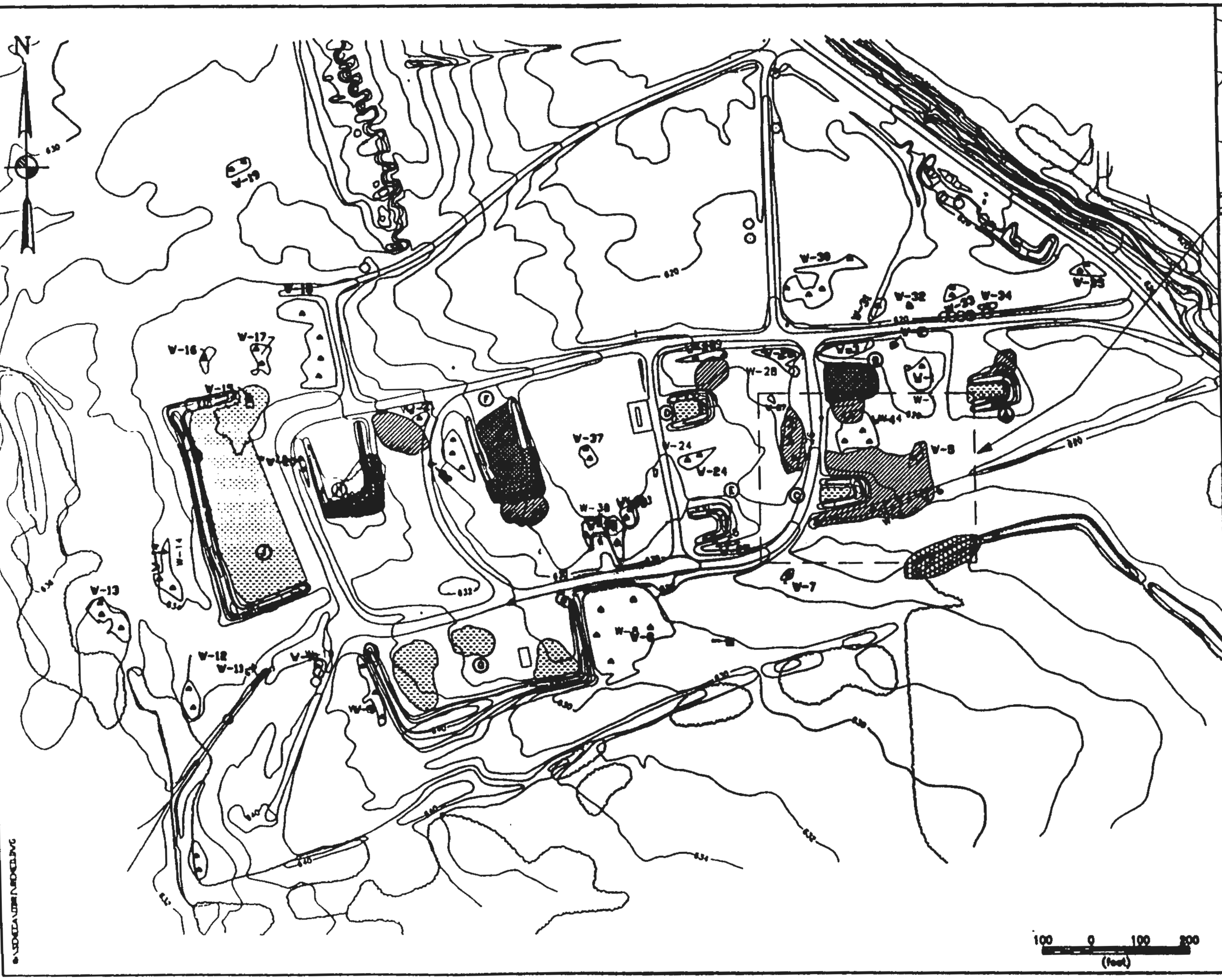
- ***Alternative 1:*** *No Action*
- ***Alternative 4:*** *Excavation and Disposal, Off-site, in Licensed Landfill*
- ***Alternative 5:*** *Excavation, Disposal, On-site, in a constructed On-site Landfill*
- ***Alternative 6:*** *Excavation, Soil Washing and Backfill*

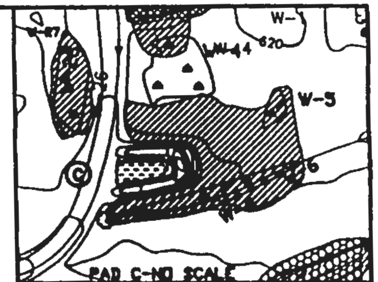
Alternative 1
No-Action Alternative

- *Nothing is Implemented*
- *Risks Remain as Presented*
- *No Monitoring is Involved*
- *Costs are Zero*
- *Retained as a Baseline Comparison to Other Alternatives*

Common Aspects of Each Alternative

- *UXO Clearance and Disposal*
- *Excavation of Soils with Lead above 500 mg/kg*
- *Excavation of Sediments in Reeder Creek above 31 mg/kg Lead and 16 mg/kg Copper*
- *Vegetative Cover of Soils above 60 mg/kg*
- *Groundwater and Sediment Monitoring Program*
- *Surface Water Runoff Control*





LEGEND:

BURNING PAD DESIGNATION

GROUND CONTOUR AND ELEVATION

WETLAND & DESIGNATION

UTILITY POLE

TREE

BRUSH

CASE 1

CASE 2

CASE 3

CASE 4

CASE 5

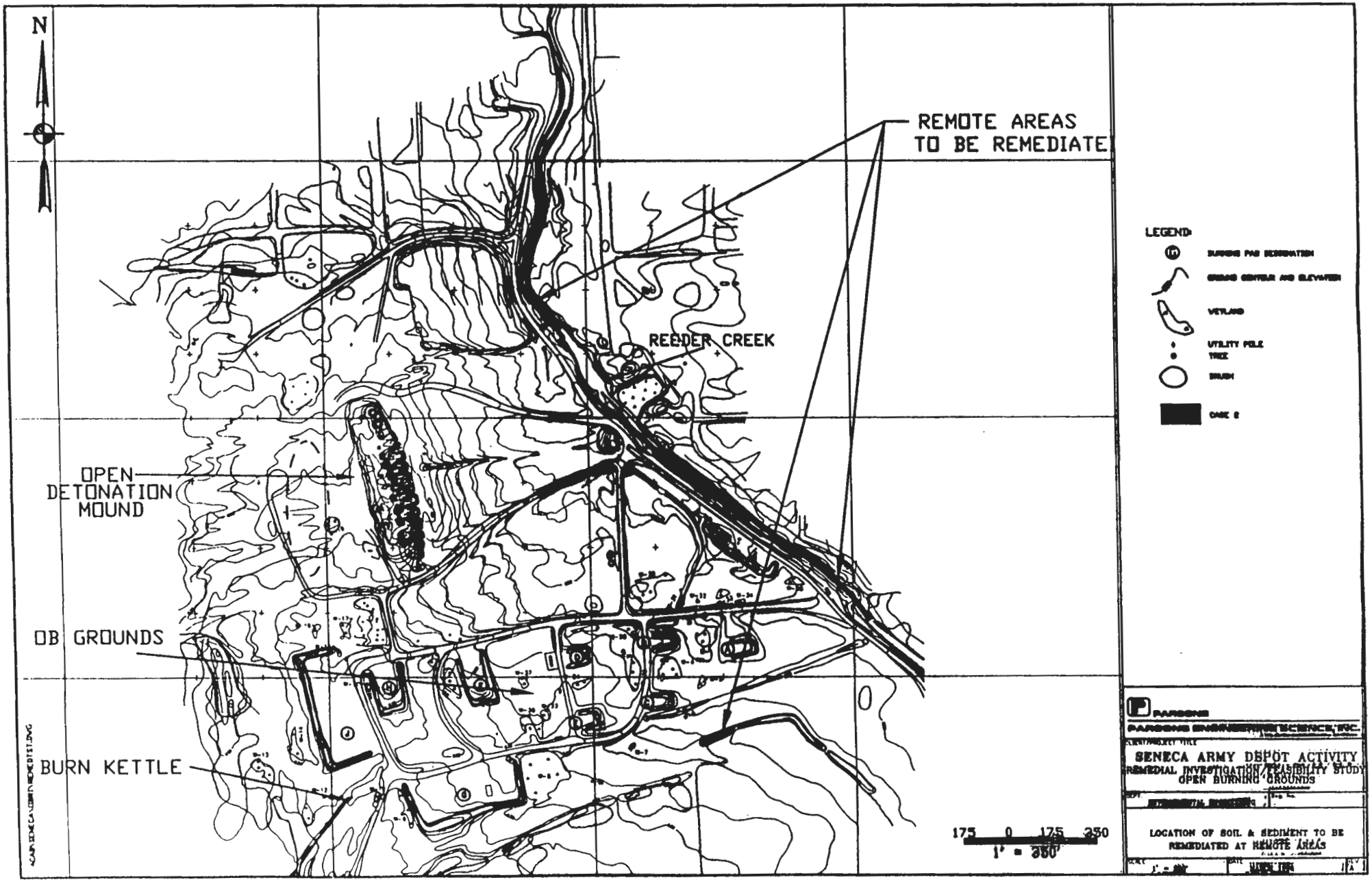
PARSONS

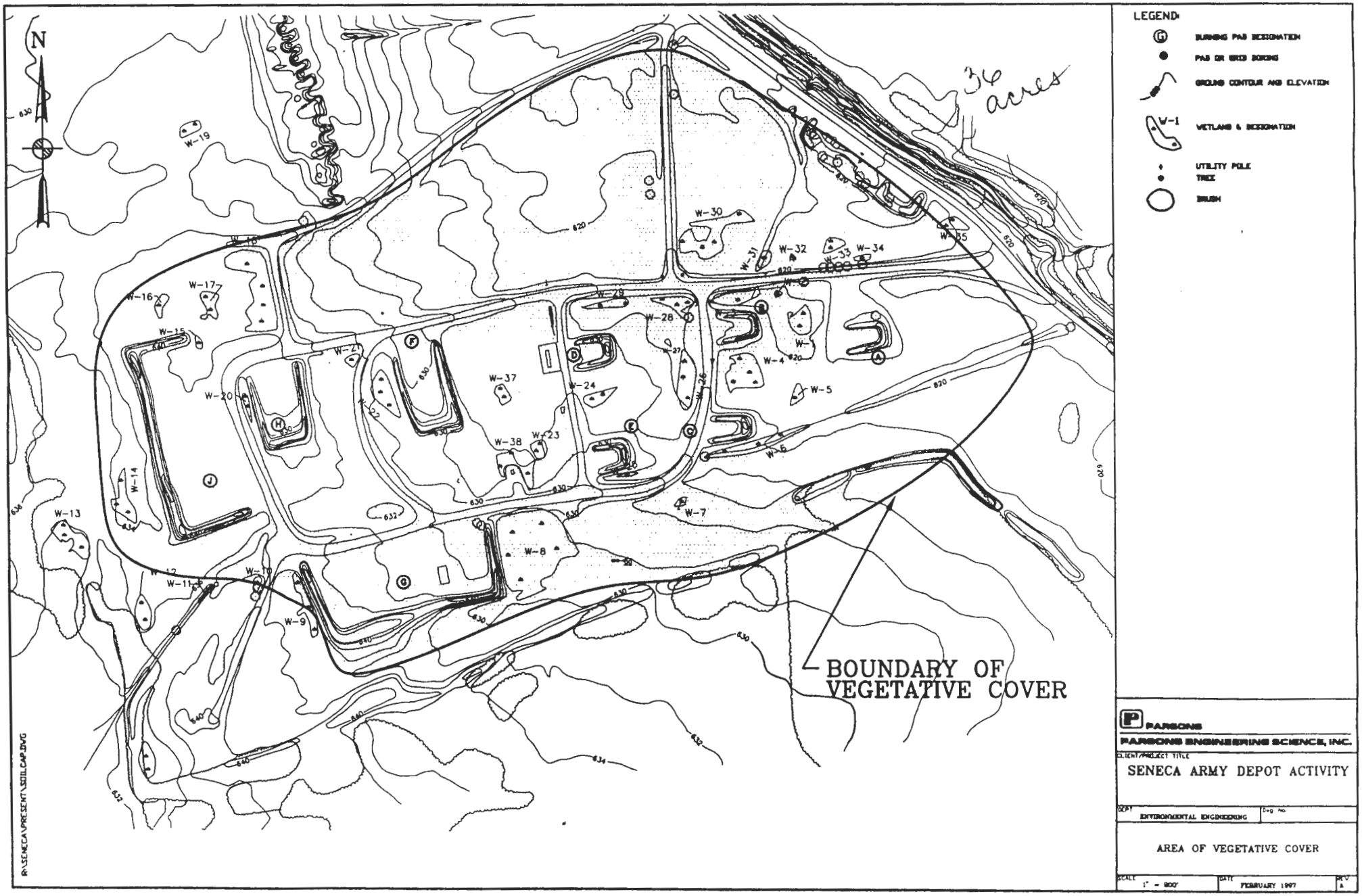
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS

LOCATION OF SOIL TO BE REMEDIATED
(GREATER THAN 500mg/kg LEAD)


N
REMOTE AREAS
TO BE REMEDIATE
REEDER CREEK
OPEN
DETONATION
MOUND
OB GROUNDS
BURN KETTLE
LEGEND:
VETLAND
UTILITY POLE
TREE
BRUSH
175 0 175 350
1" = 350'
PARSONS
SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS
LOCATION OF SOIL & SEDIMENT TO BE
REMEDIATED AT REMOTE AREAS


N
LEGEND:
BURNING PAD DESIGNATION
PAD OR GRID BORING
GROUND CONTOUR AND ELEVATION
W-1
WETLAND & DESIGNATION
UTILITY POLE
TREE
BRUSH
36 acres
W-1
W-2
W-3
W-4
W-5
W-6
W-7
W-8
W-9
W-10
W-11
W-12
W-13
W-14
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W-26
W-27
W-28
W-30
W-31
W-32
W-33
W-34
W-35
W-37
W-38
620
630
632
634
636
640
BOUNDARY OF
VEGETATIVE COVER
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
DEPT
ENVIRONMENTAL ENGINEERING
Dwg. No.
AREA OF VEGETATIVE COVER
SCALE
1" = 800'
DATE
FEBRUARY 1997
REV
A
R:\SENECA\PRESENT\SOILCAP.DWG

Alternative 4 : Off-Site Disposal

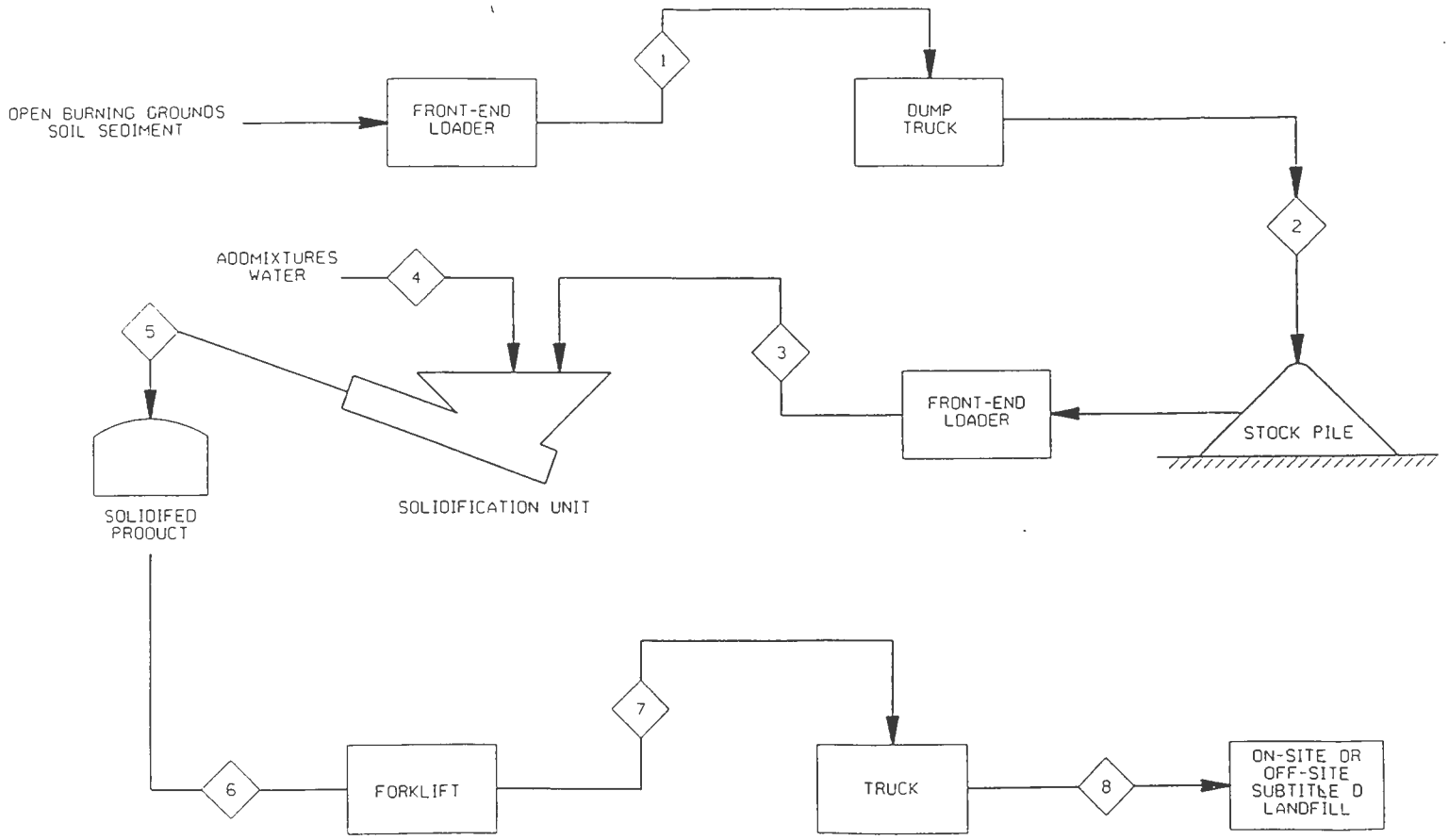
- *All Soils & Sediments Disposed of in Off-site Landfill*
- *Excavate and Solidify Soils Above TCLP Limits*
- *Long Term Effectiveness and Permanence*
  - *Effective & Permanent , ranked lower than Alternative 6*
- *Reduction of Toxicity, Mobility and Volume*
  - *Reduction achieved, ranked lower than Alternative 6*
- *Most Short Term Impacts due traffic, dust & noise*
- *Ranked Highest for Implementability*
  - *Excavation and disposal is proved and readily available*
- *Most Cost Effective Alternative*

Alternative 5 : On-Site Disposal

- *On-site Landfill Constructed to Accept Soils*
- *Excavate and Solidify Soils Above TCLP Limits*
- *Long Term Effectiveness and Permanence*
  - *Effective & Permanent , ranked lower than Alt. 6*
- *Reduction of Toxicity, Mobility and Volume*
  - *Reduction achieved, ranked lower than Alt. 6*
- *Least Short Term Impacts due traffic, dust & noise*
- *Ranked Lower than Alt. 4 for Implementability*
  - *Landfill permitting process is involved*
- *More Costly than Alternative 4*

Alternative 6 : Soil Washing

- *Techniques developed from mining industry*
- *Innovative technology will require treatability study*
- *Long Term Effectiveness and Permanence*
  - *Most Effective & Permanent Alternative*
  - *Residues are disposed off-site*
- *Reduction of Toxicity, Mobility and Volume*
  - *Ranked highest, most treatment*
- *Some Short Term Impacts*
  - *Ranked higher than Alt. 4, lower than Alt. 5*
- *Most difficult to implement*
  - *Technology is affected by unknown site conditions and only available from few vendors*
- *Most Costly Alternative*



TYPICAL FLOW RATES

MATERIAL	STREAM NO.													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SOIL/SEDIMENT (CY/HR)	50	50	40											
SOLIDIFIED PRODUCT (CY/HR)					60	60	60	60						
ADMIXTURES / WATER (CY/HR)				20										

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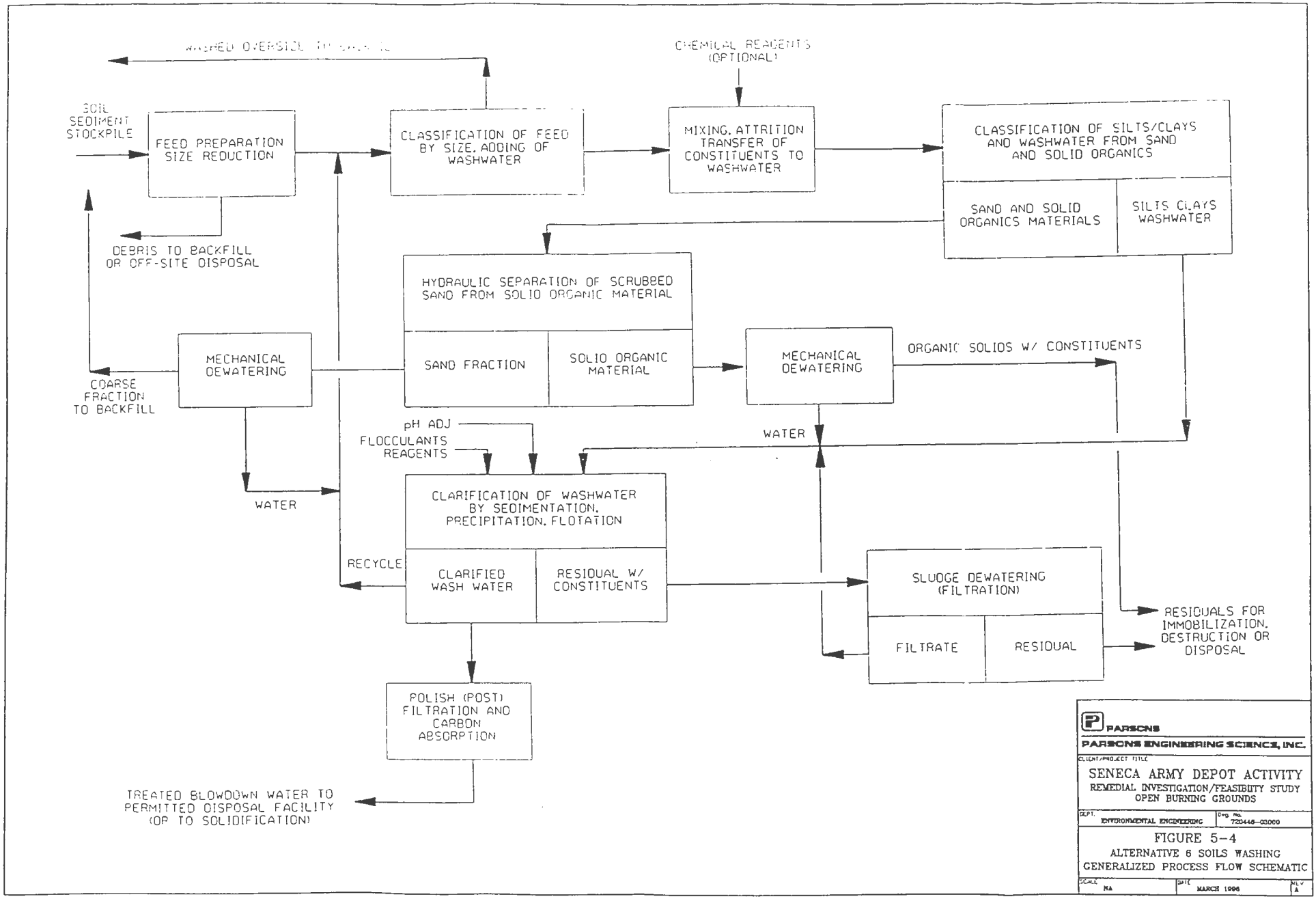
SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS

DEPT: ENVIRONMENTAL ENGINEERING | D+O No.: 720446-03000

FIGURE 5-1
ALTERNATIVE 4 AND 5
SOLIDIFICATION/SUBTITLE D LANDFILL

SCALE: NA | DATE: MARCH 1996 | REV: A



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CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS

DEPT. ENVIRONMENTAL ENGINEERING | DWG NO. 720446-03000

FIGURE 5-4
ALTERNATIVE 6 SOILS WASHING
GENERALIZED PROCESS FLOW SCHEMATIC

SCALE NA | DATE MARCH 1996 | REV A

COST ESTIMATES FOR ALTERNATIVES

Alternative	Total Present Worth Cost ($ Millions)	Capital Cost ($ Millions)	Present Worth O&M Costs ($ Millions)
4 Off-site Disposal	$4.1 to $5.7	$3.6 to $5.2	$0.503
5 On-site Disposal	$5.7	$5.2	$0.544
6 Soil Washing	$11.1	$10.6	$0.503

The Preferred Remedial Alternative

Preferred Remedial Alternative
Alternative 4 : Off-Site Disposal

- *Solidification of soils with TCLP exceedances*
- *Excavation and off-site disposal of soils and sediment*
- *Vegetative soil cover for remaining soils*
- *Construction Time:*
  - *Treatability Testing for Solidification : 3 months*
  - *Remedial Action : 12 to 18 months*
- *Present Worth Cost: $4.1 to $5.7 million*

Restoration Advisory Board
Meeting Agenda

March 18, 1997

7:00	**Welcome** Mr. Stephen M. Absolom Army Co-chair
7:05	**Acceptance of Minutes** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
7:15	**The Funding Process** Mr. Jeff Waugh Program Manager, Army Environmental Center
7:45	**Break**
8:00	**Deactivation Furnaces Remedial Investigation** Mr. Michael Duchesneau, P.E. Project Manager, Parsons Engineering Science, Inc.
8:30	**Open Discussion**
9:00	**Adjourn**

SEAD-03-037

MINUTES
RESTORATION ADVISORY BOARD
MARCH 18, 1997 MEETING

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Kamal Gupta, NYS Department of Environmental Conservation
Carla Struble, U.S. Environmental Protection Agency

Government RAB Members Not Present:

Dan Geraghty, NYS Department of Health

Community RAB Members Present:

Anne Herman, Richard Sisson, Frank Ives, Pat Jones, Brian Dombrowski,
Harold Kugelmass, David Wagner, Russell Miller

Community RAB Members Not Present:

Dick Durst/Community Co-Chair, Richard Lewis, Carmen Serrett, Henry Van Ness
Lucinda Sangree, Mary Ann Krupsak, Al Legasse, Estelle Coleman

Government and Technical Support Personnel Present:

LTC Stephen Brooks, SEDA Commander
Thomas Enroth, SEDA Engineering and Environmental Division
Janet Fallo, SEDA Engineering and Environmental Division
Susan Cooper, SEDA Secretary
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Joanne Ogden, SEDA Legal Rep/Public Affairs Officer
Mike Duchesneau, Parsons Engineering Science, Inc.
Keith Hoddinott, USA Center for Health Promotion and Preventive Medicine
Jeff Waugh, U.S. Army Environmental Center

Others Present (from sign-in sheet):

Heather Clark, Community Member
Joanne Howard, Community Member
Neil Chaffie, Community Member

2. Stephen Absolom welcomed members and support staff to the March Restoration Advisory Board in the NCO Club, outlined the evening's agenda, and asked for introductions.

3. Minutes from February's RAB meeting were approved, signed, and accepted into record.

4. Jeff Waugh presented a briefing on the Funding Process and the lengthy course it must follow.

a. The BRAC environmental program requirements first need to be identified by the installation after which the BRAC budget process (currently for FY99) begins and follows the chain of command until money is appropriated. Army BRAC budget priorities are established with the budgets allocated and money is apportioned to installations. Installations prioritize their projects and move the money into place for accomplishment of those projects. After the installation sends their request back through the chain, funds are finally released. It was noted that available funds will likely decline and confirmed the importance the RAB, Reuse Committee, and regulator input has in helping set cleanup priorities to optimize cleanup resources.

b. A concern was raised regarding funds for unplanned projects should something be found which poses a hazard. In that case, money would be appropriated protect human health and the environment.

5. Michael Duchesneau's presentation covered the Former and Existing Deactivation Furnace Sites. These sites rendered munitions inactive from 1945 to 1989. The Former site used from 1945 to the mid 1960s did not use an emission control system since there was none available at that time. The upgraded site was utilized from 1962 to 1989 and inactive since then, requires a permit to operate. Both units were classified as SWMUs and, therefore, combined as one unit. Summaries of the Remedial Investigations follow:

a. Former Deactivation Furnace - Field tasks summary shows detection of metals in surface soil sampling. Significantly elevated levels of copper and lead were found as well as detection of nitroaromatics. Groundwater sampling indicated low levels of nitroaromatics and metals. Surface water showed some metals detected above surface water standards.

b. Existing Deactivation Furnace - Surface soil sampling detected metals, but not the levels found at the former deactivation site due to the installation of air pollution control equipment that was operational. The PAHs detected (compounds found widespread and are a manmade occurrence) were associated with combustion. Groundwater sampling showed two metals above standards, but no nitroaromatics. Surface water results detected four metals above standards.

c. A discussion regarding the size of the area with ground contamination indicated that it was approximately one acre in size, not near the road or living areas, and confined to the depot. Regarding wind current and how far the contamination was carried, it appears the contaminated material was not carried as it dropped quickly to the ground and was dispersed within 200 feet. It was also noted that most of the work was seasonal and when funds were available. The furnaces were rarely used in the winter as there was no heat in the building.

6. During the open discussion, it was noted that the April meeting will take place during the schools' Easter break. To facilitate those being out of town, it was voted to hold the next RAB meeting in May. Steve Absolom also mentioned to the RAB that there would be a Peer Review held April 1-4, 1997 which will entail technical experts reviewing 15 projects at Seneca.

7. The next Restoration Advisory Board meeting will be held on May 20, 1997 at 7:00 p.m. in the SEDA Officers' Club.

8. The meeting was adjourned at 9:00 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

Department of Army
BRAC Budget Process

Briefing to Seneca Army Depot Activity
Restoration Advisory Board, March 18, 1997
by Jeff Waugh, Army Environmental Center (AEC)

Environmental Program Requirements

- Installation develops Environmental Program Requirements (EPR)
  - BRAC-Environmental Requirements (BRAC-ER)
    - Studies, Cleanup, RAB support, Program Management
    - BRAC Compliance (Asbestos, LBP, USTs, UXO, Radiation, PCBs)
  - Operations & Maintenance, Army (OMA)
    - Cultural & Natural Resources, cleanup of current operations, NEPA, other compliance requirements

Environmental Program Requirements (cont.)

- EPR similar to the Cost to Complete (CTC: cost estimating model)
- should include future work (outyears)
- funding requirements should be consistent with execution, (can't fund cleanup before design, contract limitations)

BRAC Budget Process

- Installation submits EPR to major command (MACOM)
- MACOM submits requirements to AEC
- AEC submits workplan to Department of Army BRAC Office (DAIM-BO)
- DAIM-BO submits environmental budget as part of Budget Estimate Submittal (BES)
- Army budget submission

BRAC Budget Process (cont.)

- Department of Defense budget
- Congress passes budget (authorizes and appropriates)
- President signs Defense Appropriations Bill
- Army Budget in place

Army BRAC Budget Priorities

- Military Construction
- Personnel Actions
- Information Management/Infrastructure
- Environmental

Budget Allocations

- Budget for entire BRAC-ER Program is developed from the CTC
- DAIM-BO/AEC uses EPR to apportion requirements among installations/ MACOMs at the beginning of the BRAC Program
- budget is adjusted as requirements change

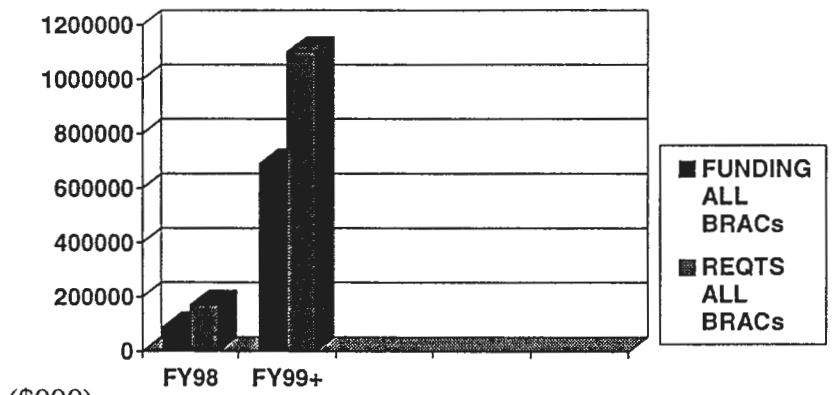
BRAC Work Plan Cutlines

- DAIM-BO provides AEC the budgeted amount by installation for the year
- AEC then identifies the cutline position for each installation for all BRACs based on the DAIM-BO budgeted amount or MACOM adjusted amount

Funding Allocation

- Relative Risk Evaluation - threat to human health and the environment
- Stakeholder concerns
- Economic considerations (reuse)
- Program execution considerations

BUDGET VS REQTS ALL BRACs



($000)

BUDGET VS REQTS ALL BRACs

FY98 TO COMPLETION ($M)

BRAC ROUND	REQTS	BUDGET	SHORTFALL
BRAC I	213	0	213
BRAC 91	225	0	225
BRAC 93	28	19	9
BRAC 95	806	761	45
TOTALS	1,272	781	491

} Accts expire

BRAC Funding Process

- Installation sends request to MACOM
- MACOM forwards request to DAIM-BO
- DAIM-BO reviews request based on current workplan and forwards funds release to Assistant Secretary of the Army for Financial Management ASA(FM)
- ASA(FM) forwards funds release request to DFAS (Defense Finance & Accounting Service

BRAC Funding Process (cont.)

- DFAS sends FAD (Funds Authorization Document) to Headquarters Corps of Engineers (HQUSACE)
- HQUSACE sends WAD (Work Authorization Directive) to appropriate Corps of Engineers district
- Funds released to district

Key Issues

- Available funds will likely decline
- BRAC I/91 will be funded out of BRAC 95 after FY97, BRAC 93 after FY99
- use RAB, Reuse Committee, & regulator input to help set cleanup priorities
- **NEED TO OPTIMIZE CLEANUP RESOURCES**

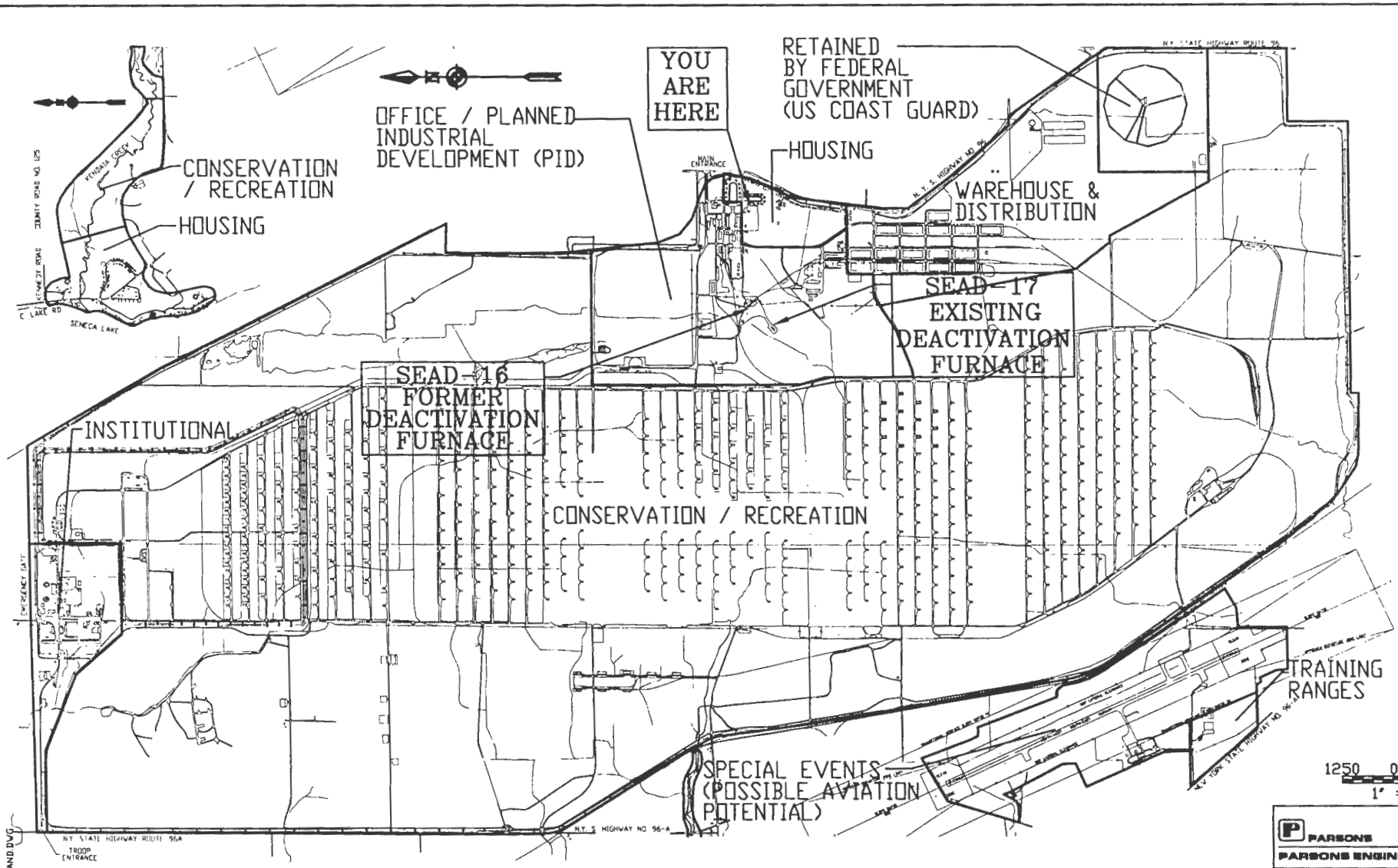
Presentation to the RAB
March 18, 1997

Update on the Former and Existing Deactivation Furnace Sites, (SEAD-16 and SEAD-17),

Michael Duchesneau, P. E.

Topics for Tonight's Presentations

- *Site History*
- *Site Background*
- *Remedial Investigation (RI) Summary*



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SENECA ARMY DEPOT ACTIVITY

DEACTIVATION FURNACE
SITE LOCATIONS
AND
LAND USE

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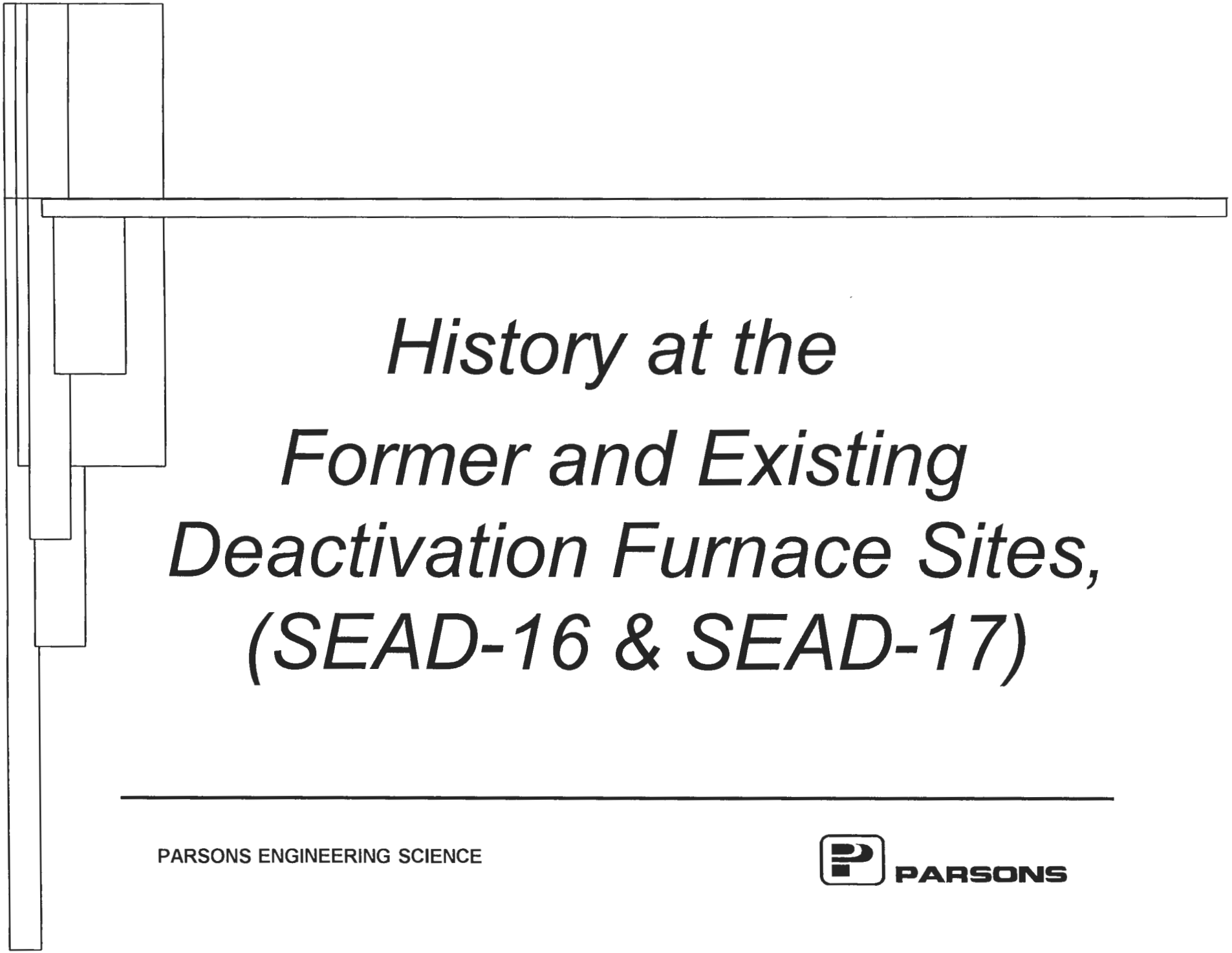

History at the Former and Existing Deactivation Furnace Sites, (SEAD-16 & SEAD-17)

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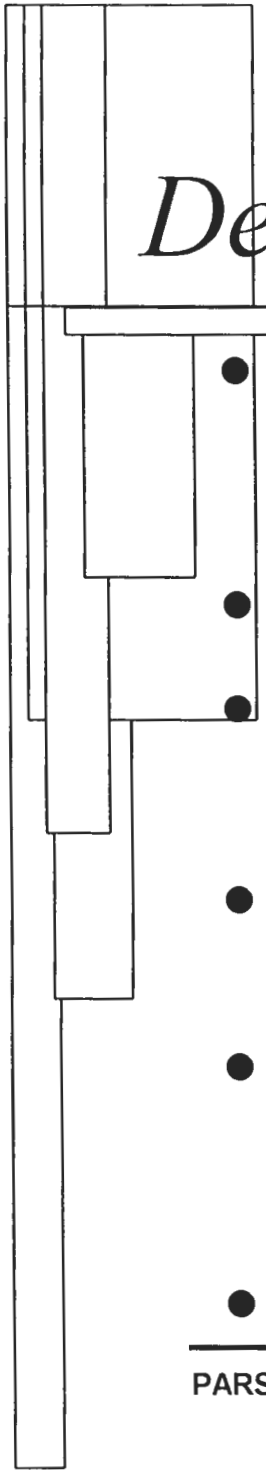
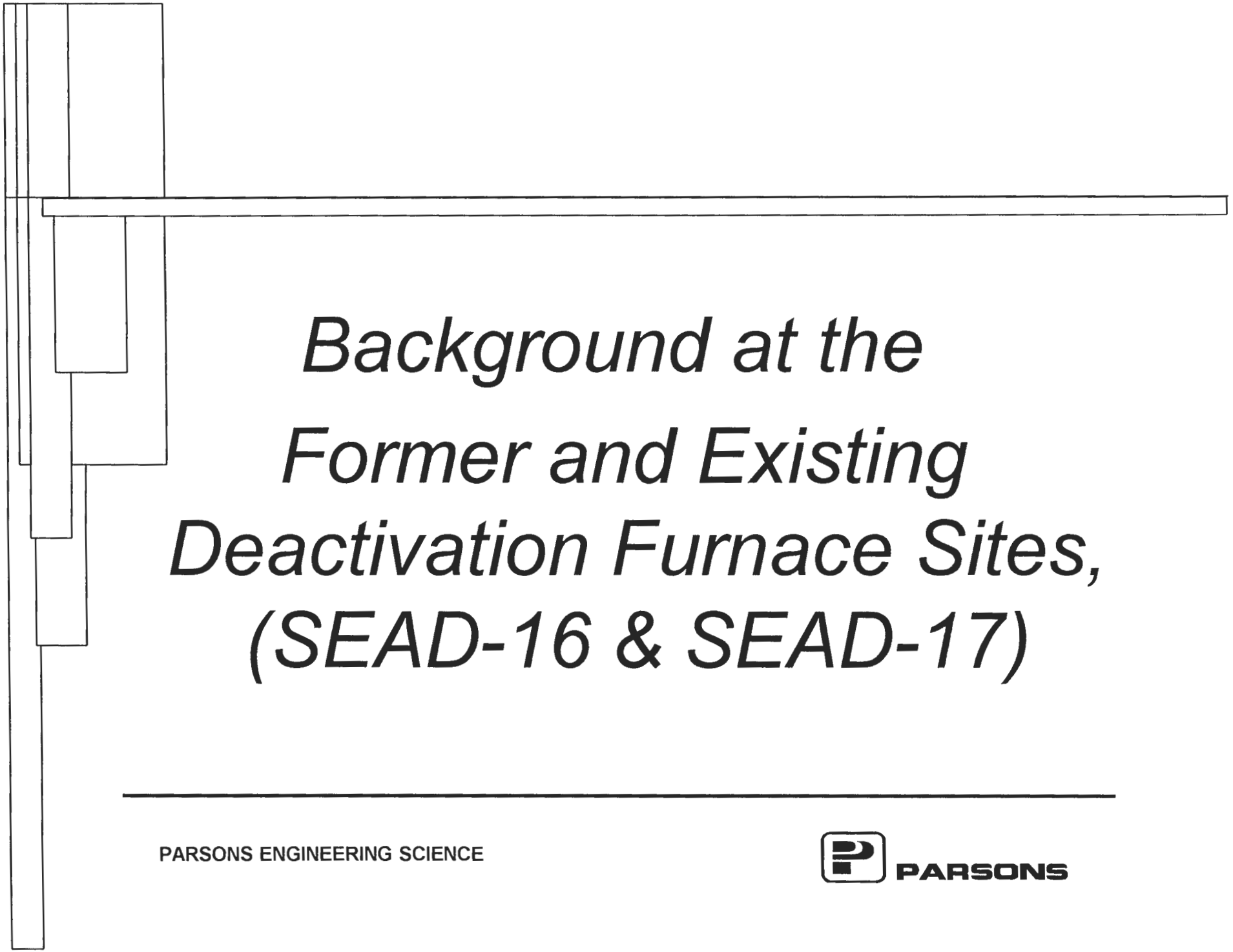
History at the Former Deactivation Furnace (SEAD-16)

- Standard Military Technique for Rendering Munitions Inactive
- Seneca "Popping Furnace" Operated from 1945 to mid-1960s
- Demilitarized Small Arms and Bulk Propellant by Heating in a Rotating Steel Kiln, approximately 20 Feet Long until Detonation was Achieved
- Air Emission Control Technology was not Available during years of operation

History at the Existing Deactivation Furnace (SEAD-17)



- Updated Version of the Former Deactivation Furnace, Deactivation occurred in a Rotating Steel Kiln, by Heating
- Furnace Operated from 1962 to mid-1989
- Baghouse, Air Coolers, Cyclone and Afterburner Added in 1978
- Automatic Waste Feed Cutoff System, CEMs and Control Equipment Added in 1989
- Inactive since 1989 pending RCRA Permit Approval as a Hazardous Waste Treatment Unit
- Partial RCRA Closure Performed in 1989



Background at the Former and Existing Deactivation Furnace Sites, (SEAD-16 & SEAD-17)

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Background at SEAD-16 and SEAD-17

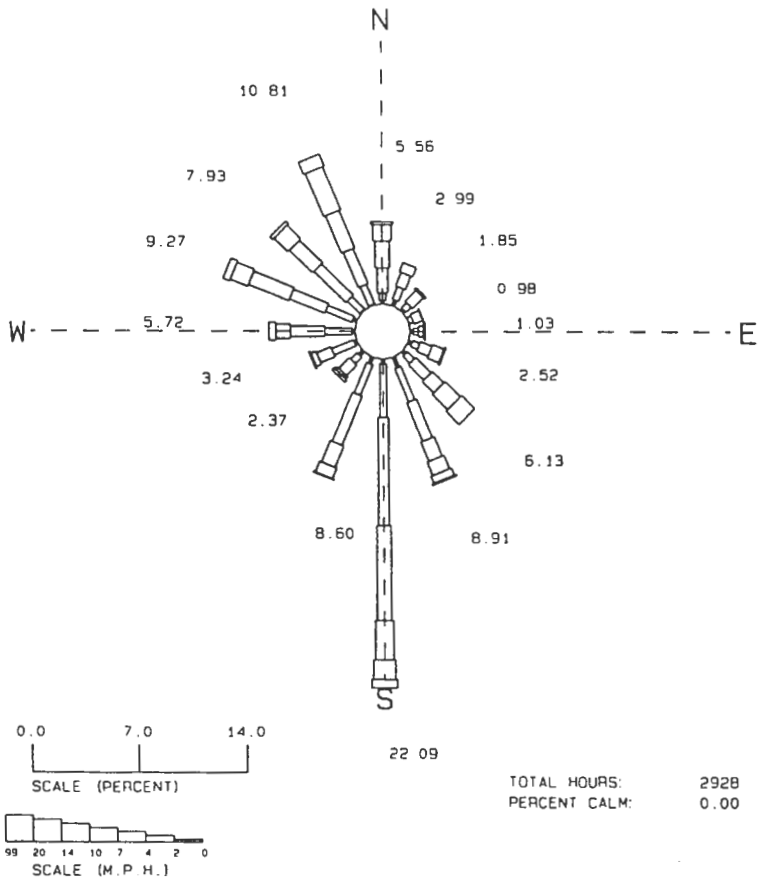
- *Both Solid Waste Management Units (SWMU)s Classified as Areas of Concern (AOC) from Historical Site Operations*
- *Expanded Site Inspections (ESI)s*
  - *Used to Confirm the Presence of Pollutants and Identify the Threat*
- *Combined as One Operable Unit*
- *Remedial Investigation (RI)*
  - *Used to Quantify the Risk Posed by the Pollutants*

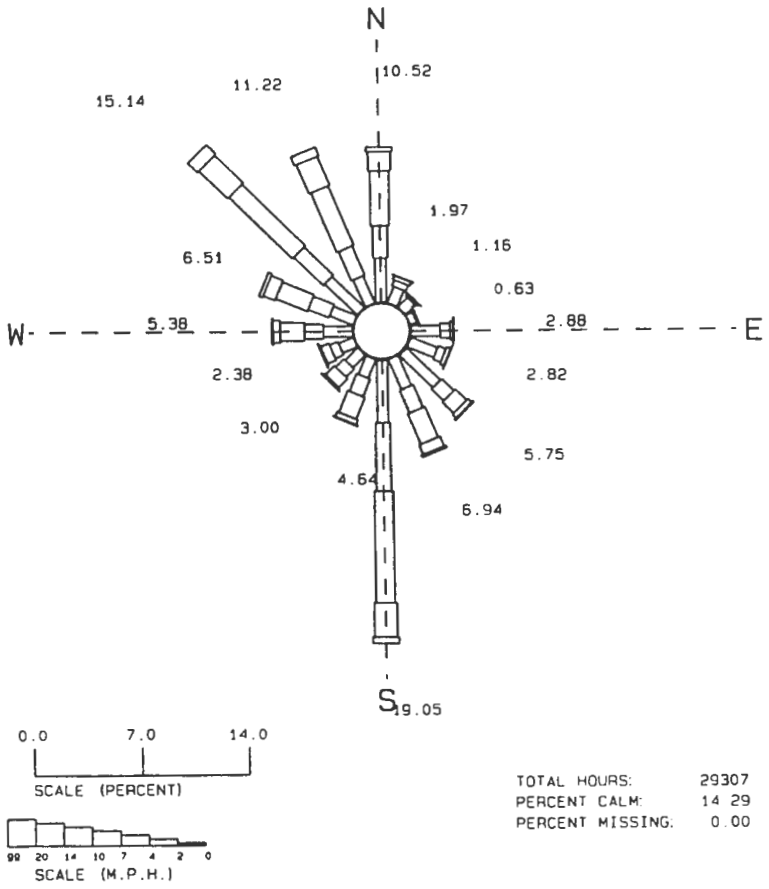
SEAD-16 & SEAD-17 Milestones

- Final ESI Issued, Dec. 11, 1995
- RI/FS Recommended
- Final RI Workplan Issued, Dec. 1, 1995
- COE Authorization to Proceed, July 2, 1996
- Fieldwork Mobilization, July 22, 1996
- Fieldwork Completed, Sept. 15, 1996
- 2nd Round GW Sampling Completed, December 13, 1996
- Draft RI Issued, Jan. 15, 1997

Conceptual Site Model at SEAD-16 and SEAD-17

- *Expected Impacts Due to Furnace Emissions*
- *Particulates Would Settle, Limiting Impacts to Surficial Soils and Drainage Collection Ditches*
- *Distribution of Metals, Pb, Ba, Hg and Zn Coincident with Prevailing Wind Direction*
- *Limited Groundwater Impacts*





SENECA ARMY DEPOT
SENECA 10-M MET. TOWER
SEASONAL WIND ROSE
10 METER LEVEL APRIL 24 - JULY 14 1995

SENECA ARMY DEPOT
ITHACA AIRPORT
ANNUAL WIND ROSE
20 FOOT LEVEL POR: 1989-1993

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SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD16 AND SEAD 17

WIND ROSES

GRAPHICS\SENECA\PROSES.CDR

Summary of the Remedial Investigation (RI) at the Former Deactivation Furnace SEAD-16

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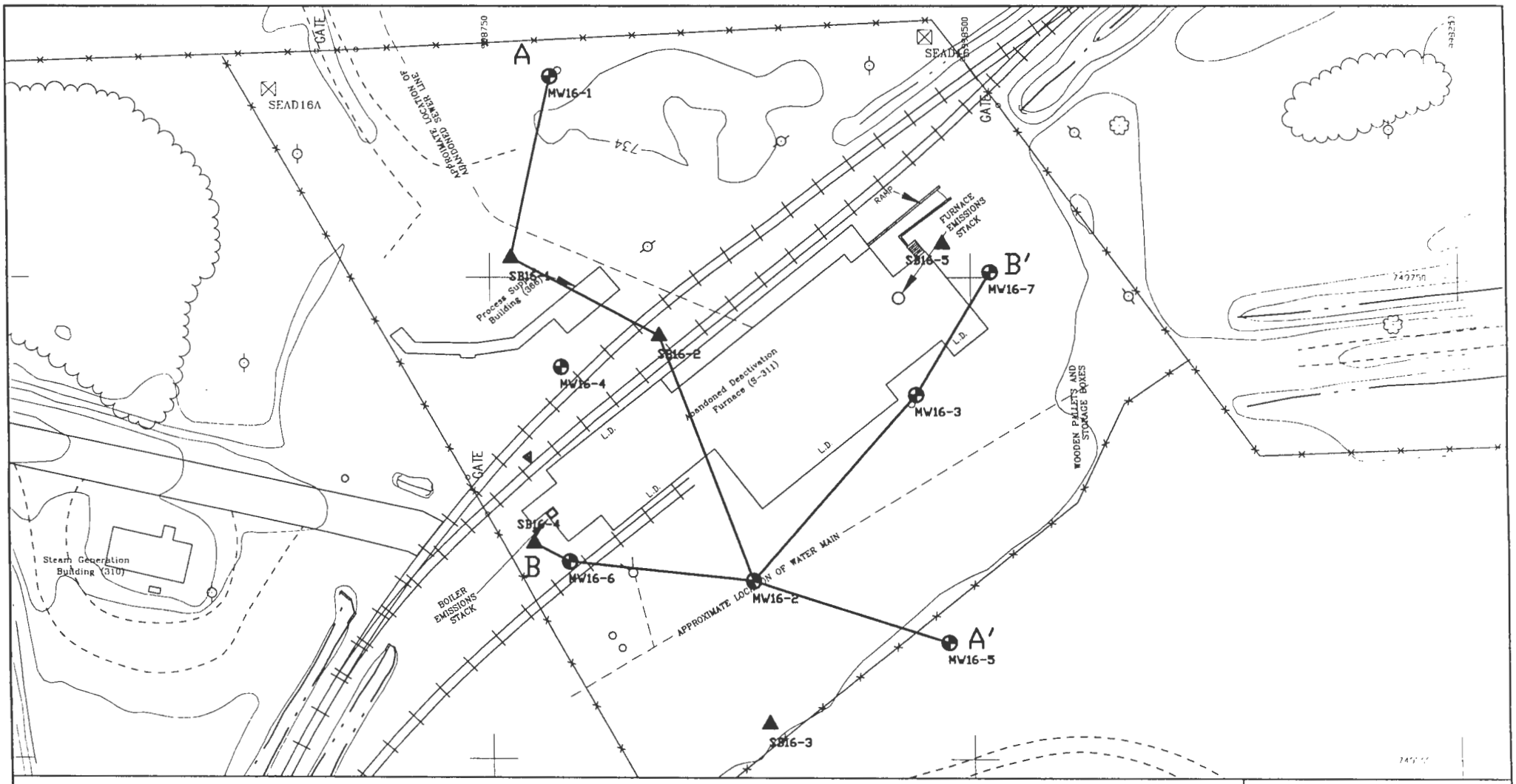
Site Geology at SEAD-16

- *Glacial Till Thicknesses range from 0.5 feet to 3.0 feet*
- *Weathered Shale Thicknesses range from 0.2 feet to 2.7 feet*
- *Competent Shale*



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▲ SOIL BORING
SB16-4

⊕ MONITORING WELL
MW16-7

25 0 25 50
1" = 50'

N

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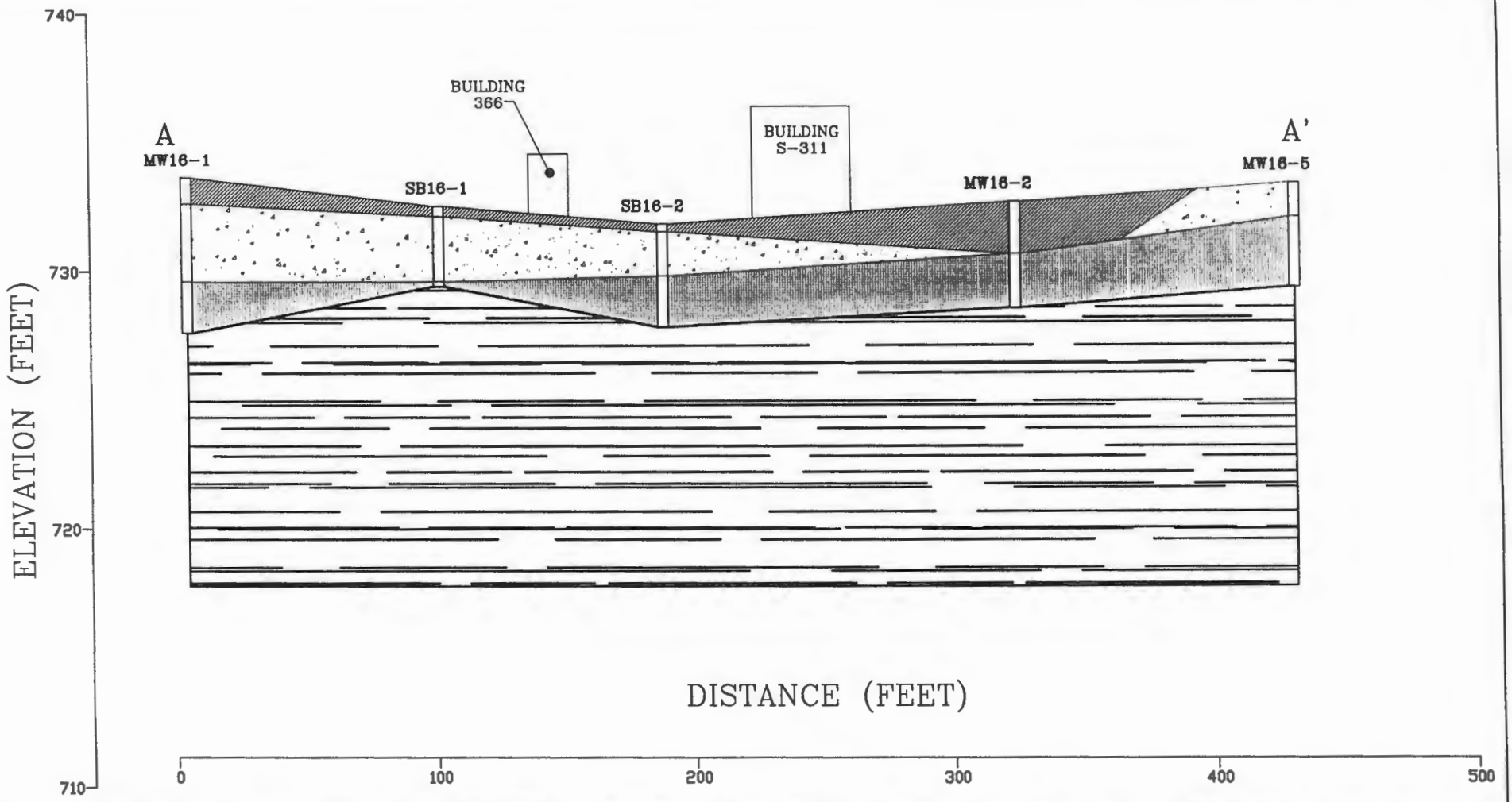
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-16 ABANDONED DEACTIVATION FURNACE

SEAD-16
LOCATION OF
GEOLOGIC
CROSS-SECTIONS
A-A' AND B-B'



FILL

WEATHERED SHALE

GLACIAL TILL

COMPETENT SHALE

HORIZONTAL SCALE - 1" = 40'
VERTICAL EXAGERATION = 10X
BUILDING VERTICAL SCALE IS ESTIMATED

ACAD\SENECA\PRESENT\SD16AA.DWG

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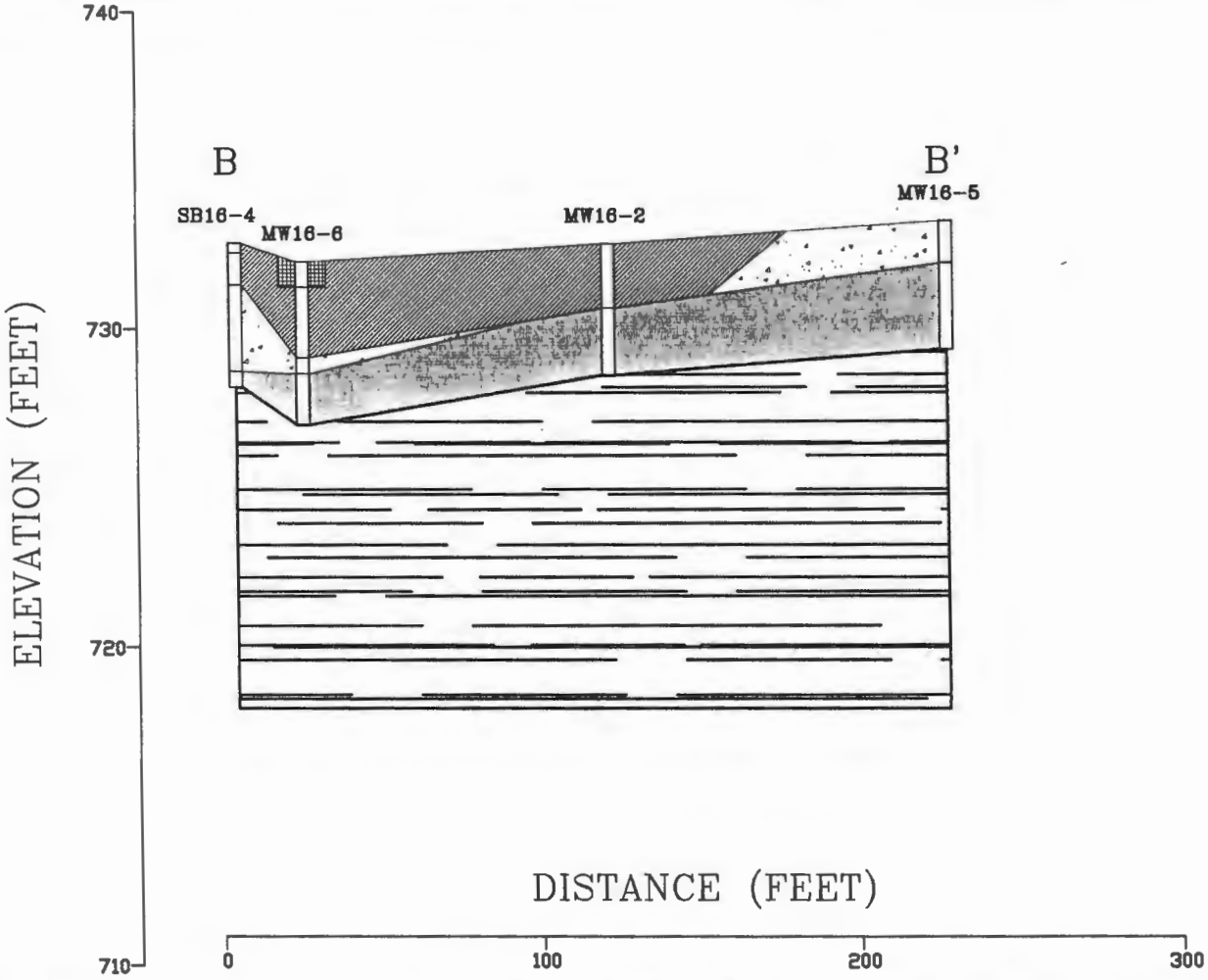
PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-16 ABANDONED DEACTIVATION FURNACE

SEAD-16
GEOLOGIC
CROSS-SECTION
A-A'



FILL

WEATHERED SHALE

CONCRETE

GLACIAL TILL

COMPETENT SHALE

HORIZONTAL SCALE - 1" = 40'
VERTICAL EXAGERATION = 10X
BUILDING VERTICAL SCALE IS ESTIMATED

ACAD\SENECA\PRESENT\SD16BB.DWG

PARSONS

PARSONS ENGINEERING SCIENCE, INC.

SENECA army DEPOT ACTIVITY
RI/FS
SEAD-16 ABANDONED DEACTIVATION FURNACE

SEAD-16
GEOLOGIC
CROSS-SECTION
B-B'

Remedial Investigation at SEAD-16, Field Tasks Summary

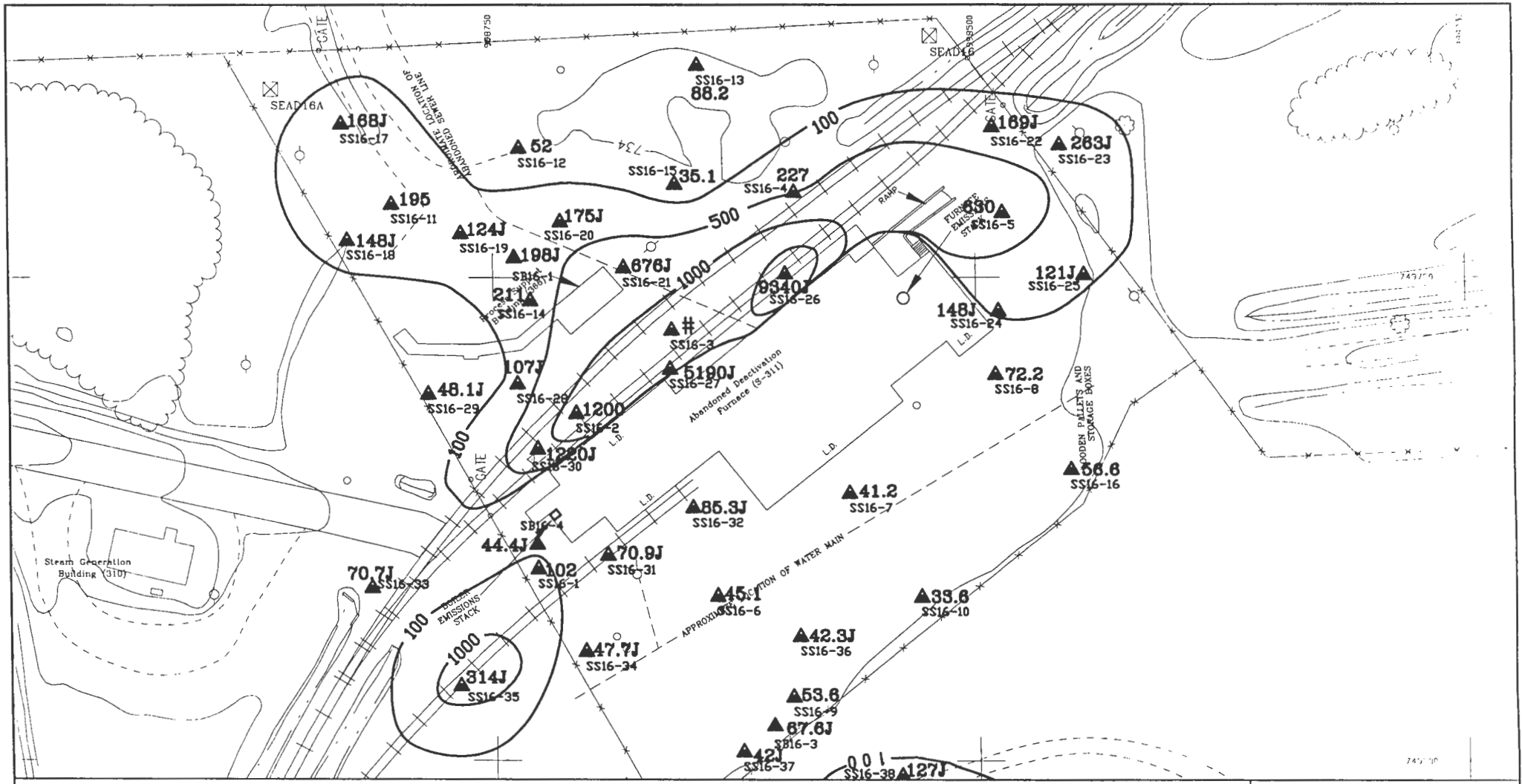
- *UXO Clearance and Support Required*
- *Seismic Refraction (4 - 115 ft. lines)*
- *Building Survey (Buildings S-311 & 366)*
  - *2 Indoor Air, 1 Outdoor Air (Background)*
  - *16 Building Materials for Asbestos*
  - *8 Soil from the Floor*
  - *2 Standing Water Samples*

Remedial Investigation at SEAD-16, Field Tasks Summary

- *5 Soil Borings & 39 Surface Soil Samp.*
- *7 Groundwater Monitoring Wells*
  - *2 Rounds of Groundwater Sampling*
- *10 Surface Water and Sediment Samples*
- *Ecological Survey*
  - *Aquatic Sampling in Kendaia Creek*
  - *Terrestrial Study*

Surface Soil Sampling Summary at SEAD-16

- *Metals Detected :*
  - *Sb(16 of 43, max 1930 mg/kg; Bkg. is 3.6 mg/kg)*
  - *Ba(8 of 43, max 9340 mg/kg; TAGM is 300 mg/kg)*
  - *Cu(43of 43, max 37,900 mg/kg; TAGM is 25 mg/kg)*
  - *Pb(41of 43, max 140,000 mg/kg;Bkg. is 22mg/kg)*
  - *Hg(26of 43, max 11.4 mg/kg; TAGM is 0.1 mg/kg)*
  - *Zn(35of 43, max 14,600 mg/kg; Bkg. is 82.5 mg/kg)*



A167J
SS17-6
SURFACE SOIL SAMPLE WITH CHEMICAL CONCENTRATION

100
CHEMICAL CONCENTRATION CONTOURS

\# REJECTED DATA

25 0 25 50
1" = 50'

N

ACAD\SENECA\PRESENT\SD16BARI.DWG

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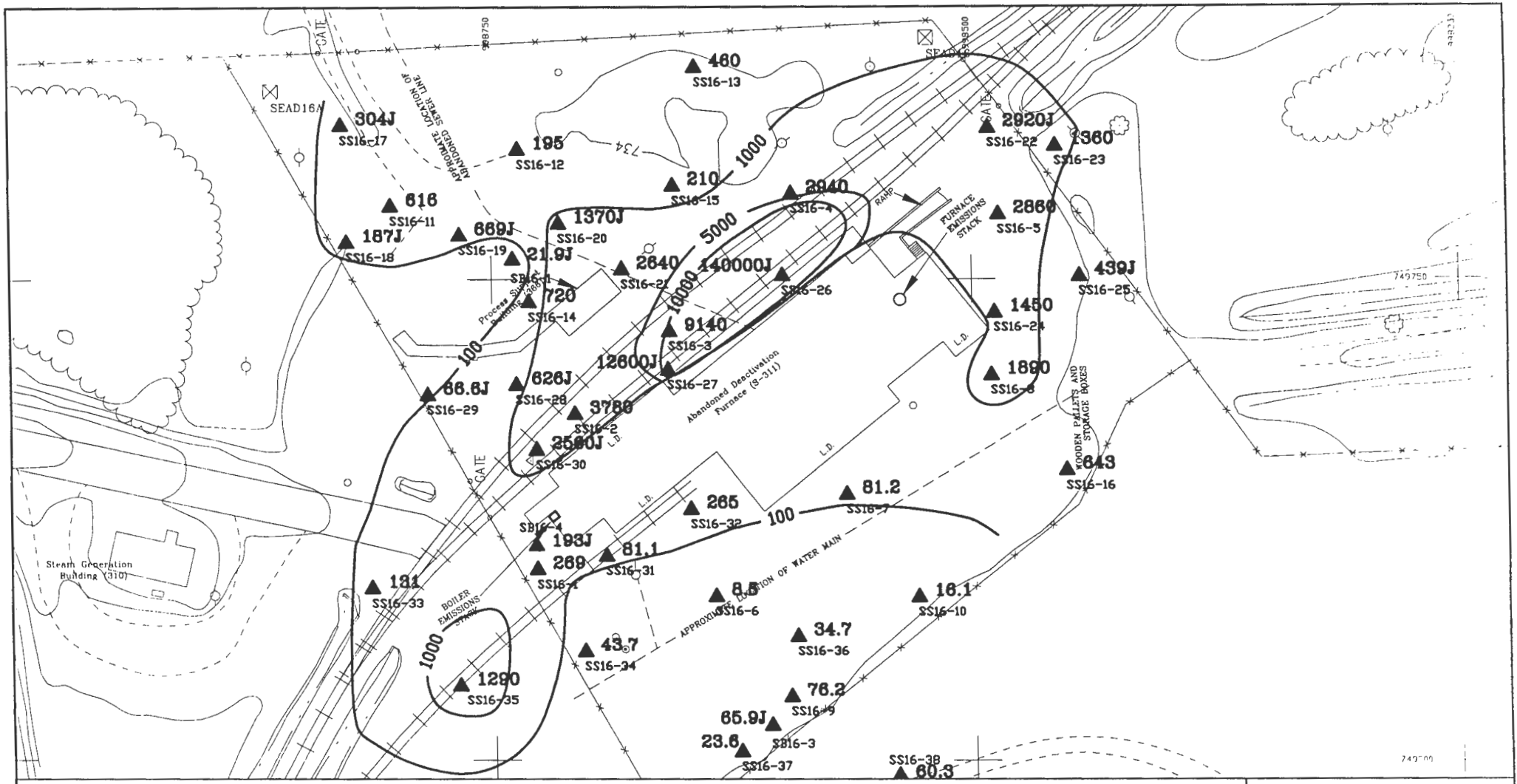
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-16 ABANDONED DEACTIVATION FURNACE

SEAD-16
DISTRIBUTION OF
BARIUM
IN
SURFACE SOILS



▲167J SS17-6 SURFACE SOIL SAMPLE WITH CHEMICAL CONCENTRATION

100 CHEMICAL CONCENTRATION CONTOURS

ACAD\SENECA\PRESENT\SD16LEAD.DVG

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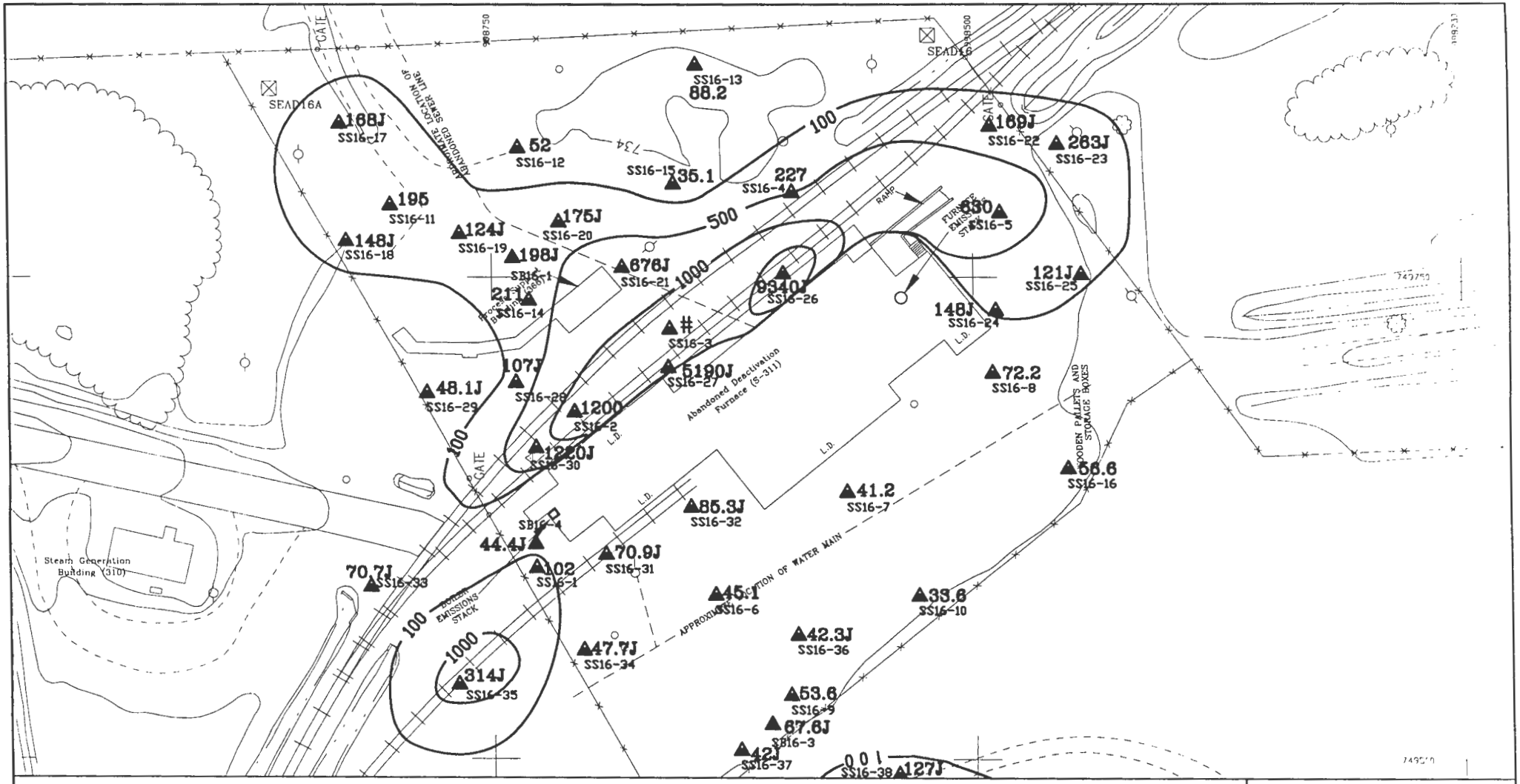
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-16 ABANDONED DEACTIVATION FURNACE

SEAD-16
DISTRIBUTION OF
LEAD
IN
SURFACE SOILS



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SENECA ARMY DEPOT ACTIVITY

RI/FS

SEAD-16 ABANDONED DEACTIVATION FURNACE

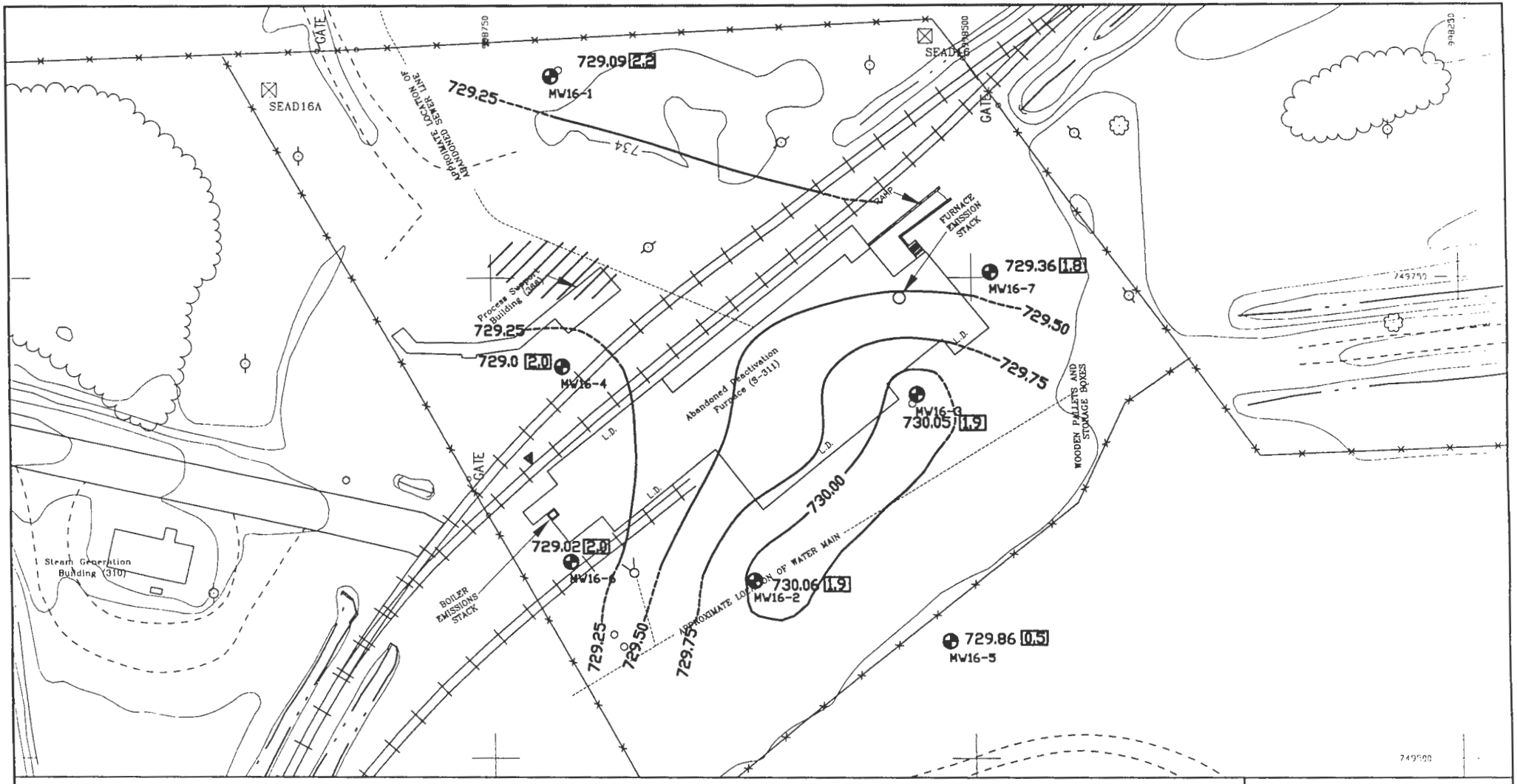
SEAD-16 DISTRIBUTION OF MERCURY IN SURFACE SOILS

Surface Soil Sampling Summary at SEAD-16

- *Nitroaromatics Detected :*
  - *2,6 Dinitrotoluene (3of 43, max 0.320 mg/kg; TAGM is 1mg/kg)*
  - *2,4 Dinitrotoluene (27 of 43, max 74 mg/kg; No TAGM)*
  - *2-amino-4,6-dinitrotoluene (1of 43, 0.430 mg/kg; No TAGM)*
  - *Tetryl (1of 43, 0.220 mg/kg; No TAGM)*

Groundwater at SEAD-16

- *Located in High Bedrock Elevation*
- *Water Table Thickness is Shallow Ranging from 2.7 to 5.1 feet, depending upon the season*
- *Direction of Flow Changes*



729.86 0.5
MW16-7 MONITORING WELL WITH ELEVATION OF GROUNDWATER AND SATURATED THICKNESS (IN BOX)

GROUNDWATER CONTOUR LINE (DASHED WHERE INFERRED)

APPROXIMATE AREA OF BEDROCK HIGH (>729 msl) BASED ON STRATIGRAPHIC DATA FROM SB16-1

25 0 25 50
1" = 50'

N

ACAD\SENECA\PRESENT\SD16GWTP.DWG

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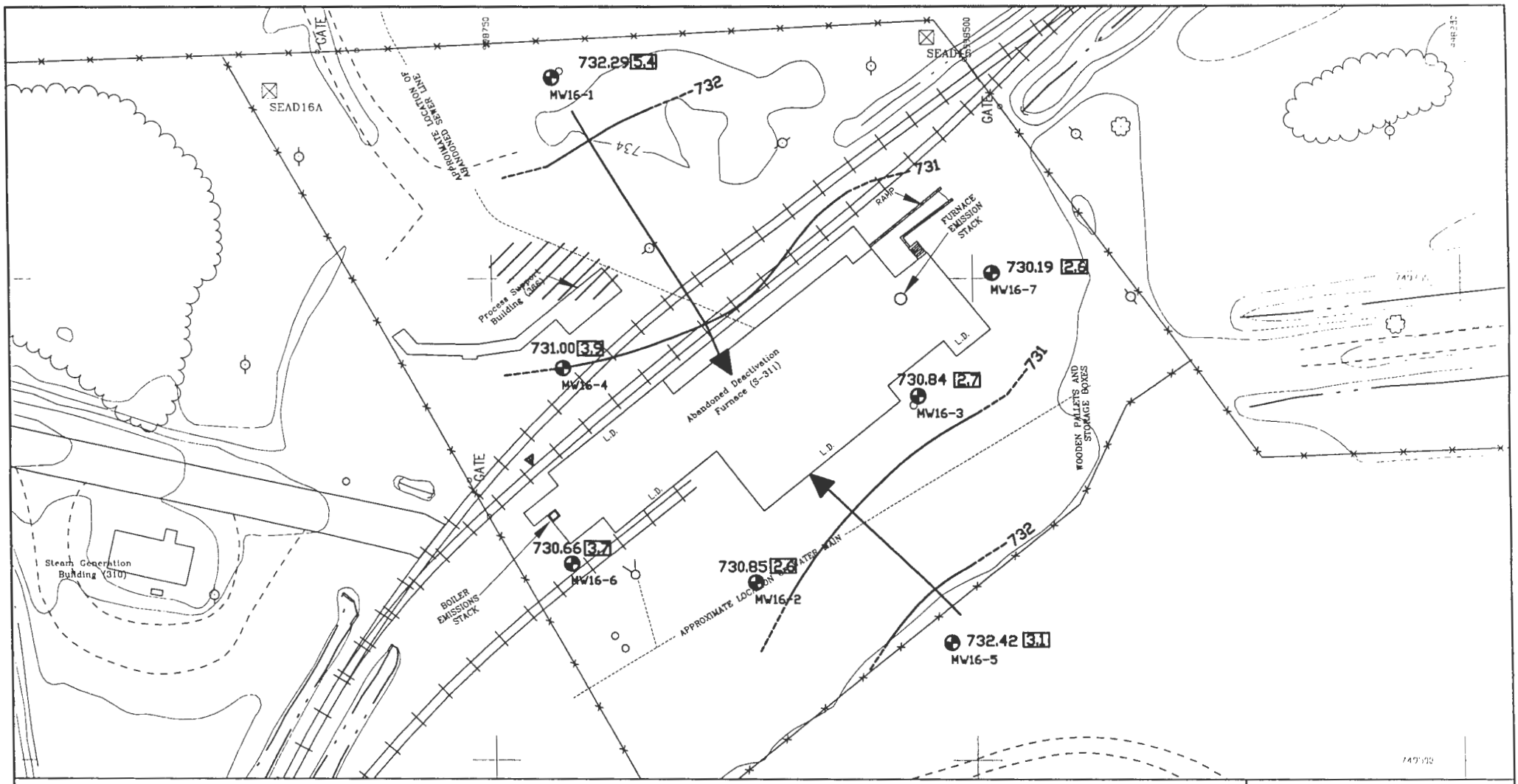
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-16 ABANDONED DEACTIVATION FURNACE

SEAD-16
GROUNDWATER TOPOGRAPHY MAP
FOR THE TILL/WEATHERED
SHALE AQUIFER
AUGUST 27, 1996



730.19 2.6
MW16-7
MONITORING WELL WITH ELEVATION OF GROUNDWATER AND SATURATED THICKNESS (IN BOX)

GROUNDWATER CONTOUR LINE (DASHED WHERE INFERRED)

ARROW INDICTES APPROXIMTE DIRECTION OF GROUNDWATER FLOW

APPROXIMATE AREA OF BEDROCK HIGH (>729 msl) BASED ON STRATIGRAPHIC DATA FROM SB16-1

25 0 25 50
1' = 50'

N

ACAD\SENECA\PRESENT\SDI6GWTW.DWG

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-16 ABANDONED DEACTIVATION FURNACE

SEAD-16
GROUNDWATER TOPOGRAPHY MAP
FOR THE TILL/WEATHERED
SHALE AQUIFER
DECEMBER 6, 1996

Groundwater Sampling Summary for SEAD-16

- *No VOCs Detected*
- *2 Nitroaromatics Detected, None Above 5 ug/L Class GA Standard:*
  - *1,3Dinitrobenzene (2of 7 MWs @1.8 & 0.26ug/L)*
  - *2,4Dinitrotoluene (1 of 7 MWs @ 0.68ug/L)*
- *7 Metals above GA Standard*
  - *Al , Fe, Mn, Pb, Sb, Na, Tl*

Groundwater Sampling Summary for SEAD-16

- Metals Detected and Criteria :
  - Al (4 of 7 MWs; max 1.85 mg/L; Secondary MCL 0.2 mg/L)
  - Sb (2 of 7 MWs; max 0.012 mg/L; MCL 0.006 mg/L) antamony
  - Pb (1 of 7 MWs; 0.024 mg/L; GA 0.025 mg/L; EPA DW Action Limit 0.015mg/L) lead
  - Tl (1 of 7 MWs; 0.006 mg/L; MCL 0.002 mg/L) toluene

Surface Water Sampling Summary for SEAD-16

- *Drainage Ditches drain to Headwaters of Kendaia Creek, Class C*
- *No VOCs, PCBs/Pesticides and Nitroaromatics*
- *6 Metals, (Cd, Cu, Fe, Pb, Se and Zn) were detected above Class C Surface Water Standard*

Surface Water Sampling Summary for SEAD-16

- *Metals Detected and Class C Criteria :*
  - *Cd - 1 of 10 ; 2 ug/L; Class C 1.8 ug/L* Cadmium
  - *Cu - 7 of 10; max 424 ug/L; Class C 20 ug/L* Copper
  - *Pb - 9 of 10; max 813 & 97 ug/L; Class C Criteria 7 ug/L* Lead
  - *Zn - 3 of 10; max 253 & 217 ug/L; Class C Criteria 141 ug/L* Zinc

SUMMARY OF BASELINE HUMAN HEALTH RISK ASSESSMENT SEAD-16, Former Deactivation Furnace

EXPOSURE SCENARIO	TOTAL HAZARD INDEX	TOTAL CANCER RISK
Current on-site Worker	0.10	2.4×10^{-6}
Future on-site Industrial Worker (Inside Bldg)	19.6	3.5×10^{-5}
Future on-site Construction Worker (Digging in Soil)	2.15	5.1×10^{-6}
Future Trespasser (Child)	0.70	5.1×10^{-6}
EPA target value	1.0	$10^{-4} \times 10^{-6}$

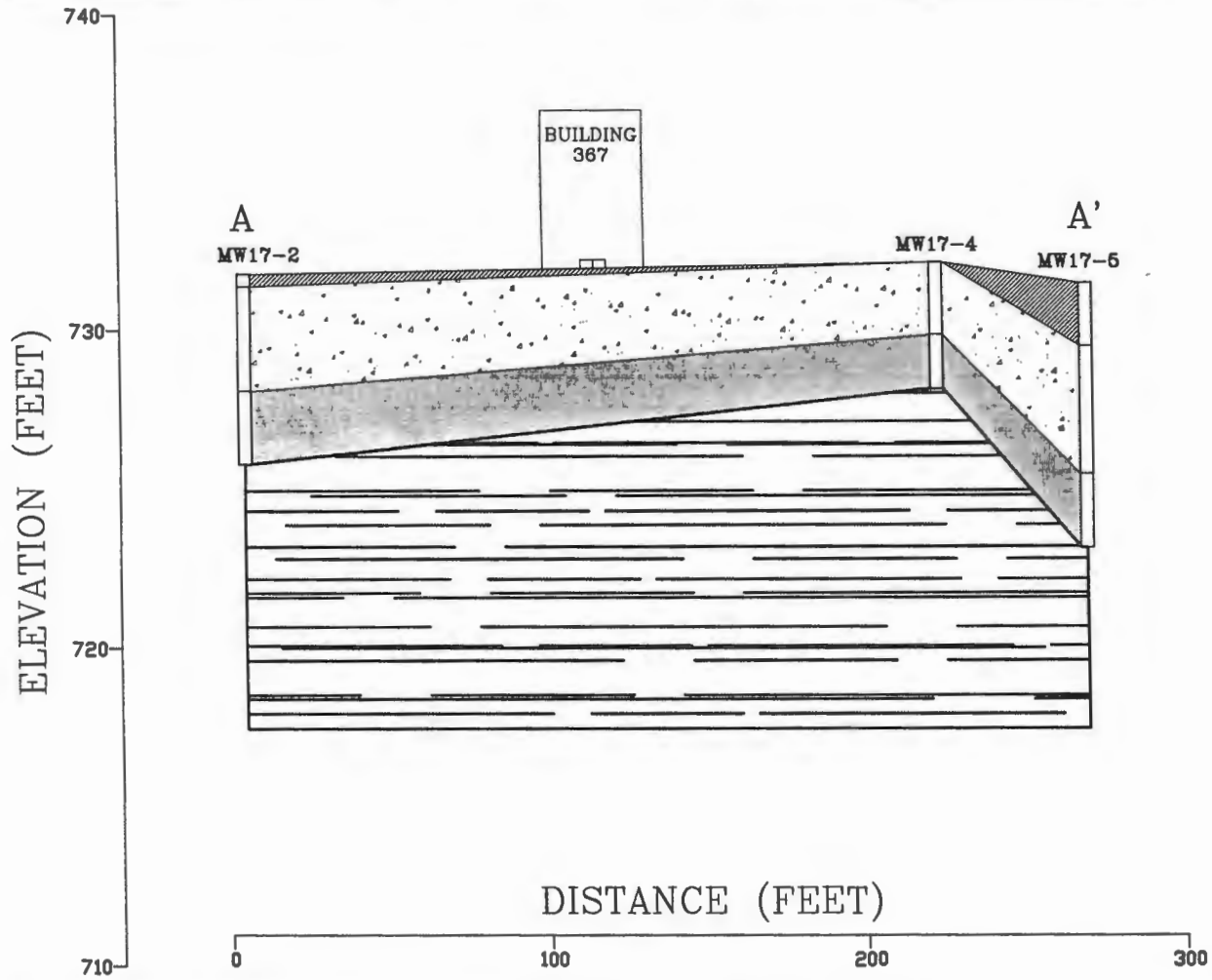
Summary of the Remedial Investigation (RI) at the Existing Deactivation Furnace SEAD-17

PARSONS ENGINEERING SCIENCE

PARSONS

Site Geology at SEAD-17

- *Glacial Till Thicknesses range from 2.3 feet to 6.0 feet*
- *Weathered Shale Thicknesses range from 0.5 feet to 3.3 feet*
- *Competent Shale*



FILL

WEATHERED SHALE

GLACIAL TILL

COMPETENT SHALE

HORIZONTAL SCALE – 1" = 40'
VERTICAL EXAGERATION = 10X
BUILDING VERTICAL SCALE IS ESTIMATED

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SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-17 ACTIVE DEACTIVATION FURNACE

SEAD-17
GEOLOGIC
CROSS-SECTION
A-A'

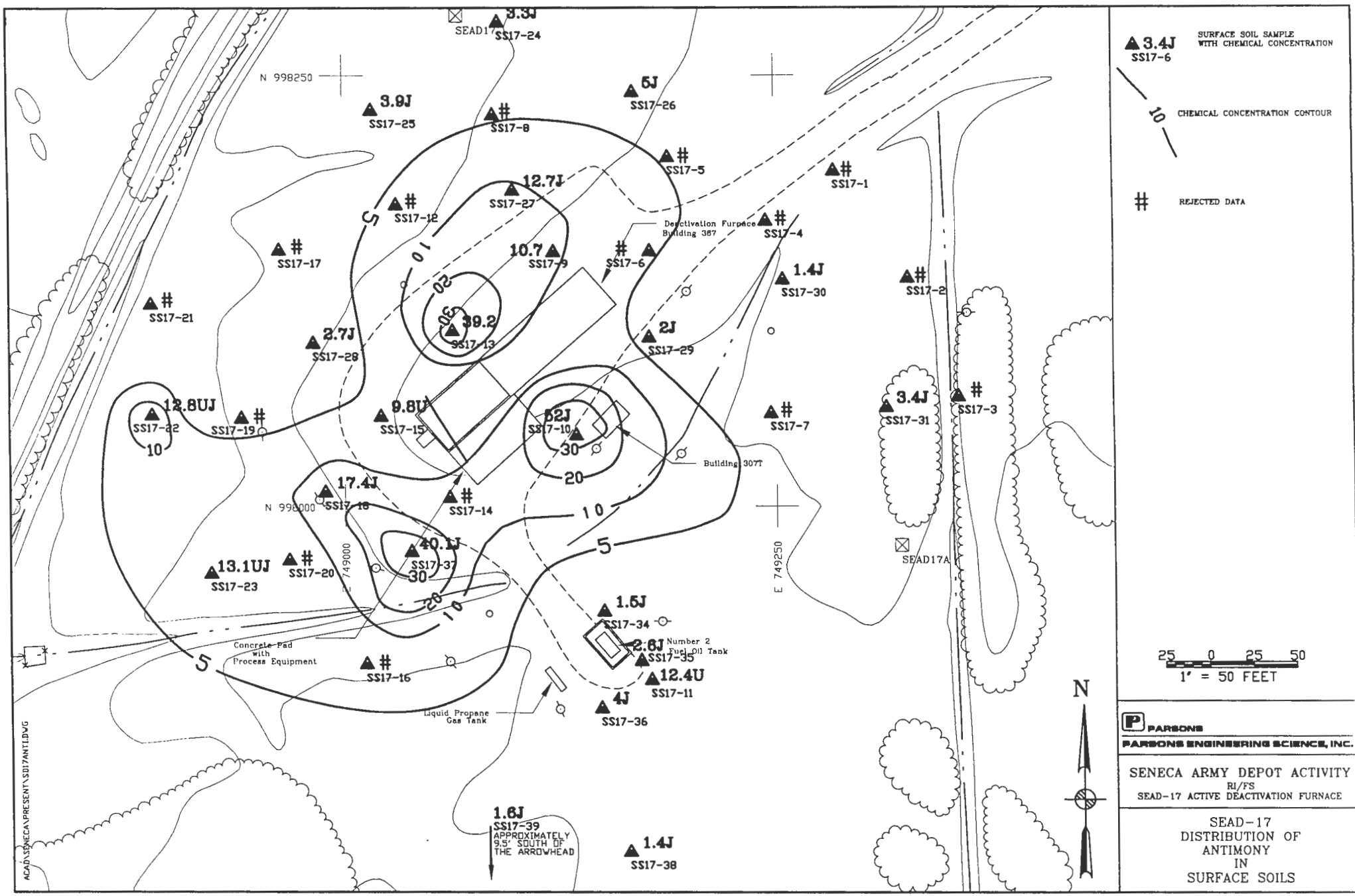
Remedial Investigation at SEAD-17, Field Tasks Summary

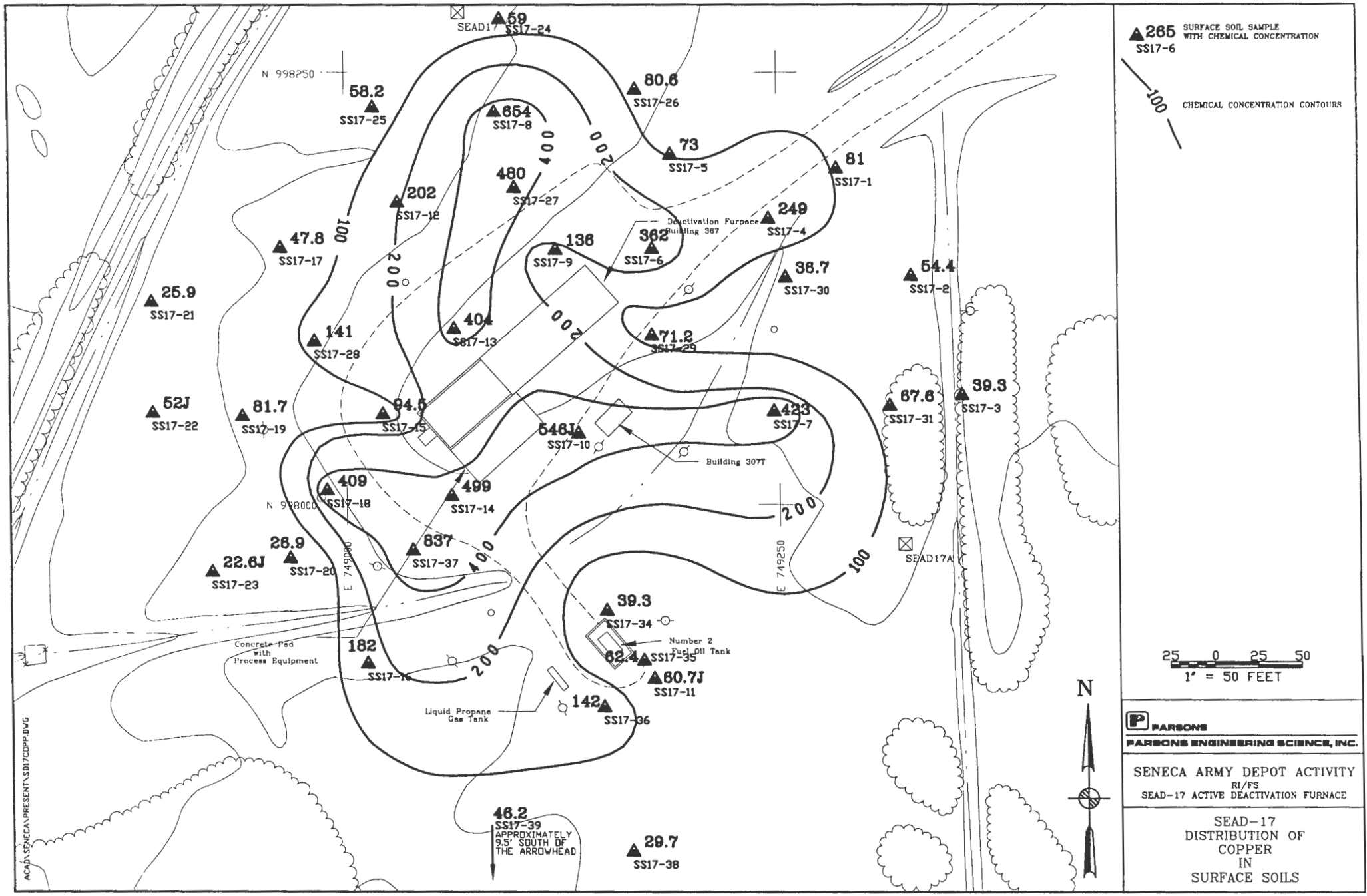
- UXO Clearance and Support Required
- 4 Soil Borings & 38 Surface Soil Samp.
- 5 Groundwater Monitoring Wells
  - 2 Rounds of Groundwater Sampling
- 10 Surface Water and Sediment Samples
- Ecological Survey
  - Aquatic Sampling of Headwaters of Kendaia Creek
  - Terrestrial Study

Surface Soil Sampling Summary at SEAD-17

Air pollution control units in place

- Metals Detected :
  - Sb(9 of 38, max 52 mg/kg; Bkg 3.6 mg/kg)
  - Ba(5 of 38, max 524 mg/kg; TAGM is 300 mg/kg)
  - Cu(37 of 38, max 837 mg/kg; TAGM is 25 mg/kg)
  - Pb(37of 38, max 6,270mg/kg;Bkg22mg/kg)
  - Hg(7of 38, max 1.0 mg/kg; TAGM is 0.1 mg/kg)
  - Zn(35 of 38, max 1,530 mg/kg; Bkg is 82.5 mg/kg)


SEAD17
3.3J SS17-24
N 998250
3.9J SS17-25
SS17-8
5J SS17-26
SS17-5
SS17-1
12.7J SS17-27
SS17-12
Deactivation Furnace Building 307
SS17-4
SS17-17
10.7 SS17-9
SS17-6
1.4J SS17-30
SS17-2
SS17-21
39.2 SS17-13
2.7J SS17-28
2J SS17-29
12.8UJ SS17-22
SS17-19
9.8U SS17-15
52J SS17-10
SS17-7
3.4J SS17-31
SS17-3
Building 307T
17.4J SS17-18
N 998000
SS17-14
40.1J SS17-37
E 749000
E 749250
SEAD17A
13.1UJ SS17-23
SS17-20
1.5J SS17-34
2.6J SS17-35
Number 2 Fuel Oil Tank
Concrete Pad with Process Equipment
SS17-16
12.4U SS17-11
4J SS17-36
Liquid Propane Gas Tank
1.6J SS17-39
APPROXIMATELY 9.5' SOUTH OF THE ARROWHEAD
1.4J SS17-38
3.4J SS17-6
SURFACE SOIL SAMPLE WITH CHEMICAL CONCENTRATION
CHEMICAL CONCENTRATION CONTOUR
REJECTED DATA
25 0 25 50
1" = 50 FEET
N
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-17 ACTIVE DEACTIVATION FURNACE
SEAD-17
DISTRIBUTION OF
ANTIMONY
IN
SURFACE SOILS
ACAD\SENECA\PRESENT\SD17ANT1.DWG



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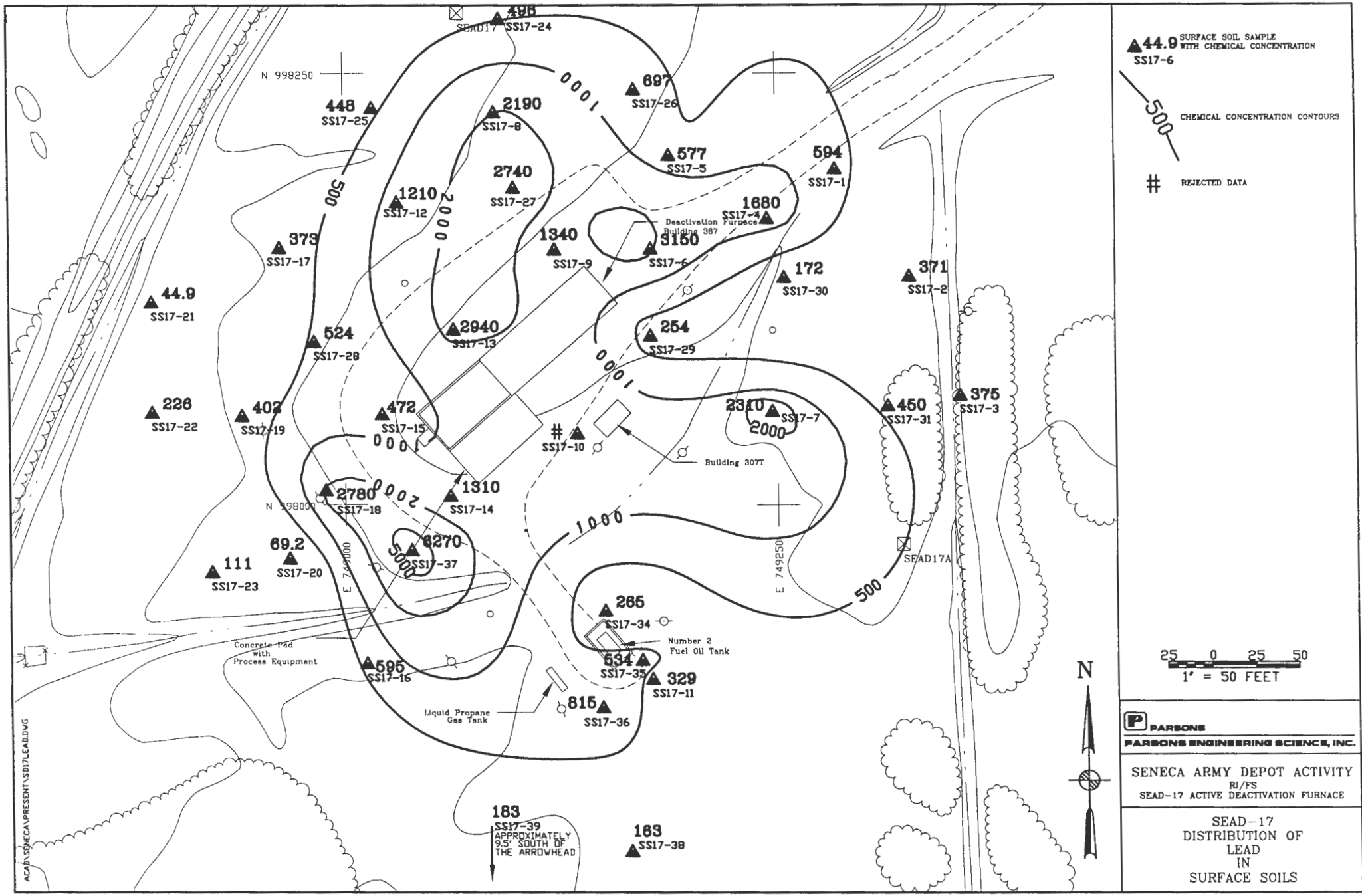
PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-17 ACTIVE DEACTIVATION FURNACE

SEAD-17
DISTRIBUTION OF
COPPER
IN
SURFACE SOILS


44.9 SURFACE SOIL SAMPLE WITH CHEMICAL CONCENTRATION
SS17-6
500 CHEMICAL CONCENTRATION CONTOURS
REJECTED DATA
N 998250
N 998000
E 749000
E 749250
SEAD17
SEAD17A
Deactivation Furnace Building 367
Building 307T
Concrete Pad with Process Equipment
Number 2 Fuel Oil Tank
Liquid Propane Gas Tank
496 SS17-24
448 SS17-25
2190 SS17-8
697 SS17-26
577 SS17-5
594 SS17-1
1210 SS17-12
2740 SS17-27
1680 SS17-4
373 SS17-17
1340 SS17-9
3150 SS17-6
172 SS17-30
371 SS17-2
44.9 SS17-21
524 SS17-28
2940 SS17-13
254 SS17-29
226 SS17-22
402 SS17-19
472 SS17-15
SS17-10
2310 SS17-7
450 SS17-31
375 SS17-3
2780 SS17-18
1310 SS17-14
69.2 SS17-20
6270 SS17-37
111 SS17-23
265 SS17-34
534 SS17-35
329 SS17-11
595 SS17-16
815 SS17-36
183 SS17-39 APPROXIMATELY 9.5' SOUTH OF THE ARROWHEAD
183 SS17-38
1000
500
2000
25 0 25 50
1" = 50 FEET
N
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
RI/FS
SEAD-17 ACTIVE DEACTIVATION FURNACE
SEAD-17
DISTRIBUTION OF
LEAD
IN
SURFACE SOILS
ACAD\SENECA\PRESENT\SD17LEAD.DWG

Surface Soil Sampling Summary at SEAD-17

- *Nitroaromatics Detected :*
  - *2,4 Dinitrotoluene (4of 38, Ranged from 72 to 330 ug/kg; No TAGM)*
- *PAHs Detected:*
  - *Ubiquitous, Detected in every sample*
  - *3-nitroanaline (1 of 38, 990 ug/kg; TAGM is 500 ug/kg)*
  - *Dibenz(a,h)anthracene (3 of 38, max 59 ug/kg; TAGM is 14 ug/kg)*

Incomplete combustion

Groundwater at SEAD-17

- Located in High Bedrock Elevation
- Water Table Thickness is Shallow Ranging from 2.7 to 5.1 feet
- Depth to Water :
  - 2.4 feet to 3.2 feet in April
  - 6.9 feet to 7.6 feet in August
- Direction of Flow Changes Depending on the Time of Year

Groundwater Sampling Summary for SEAD-17

- *1st Round 2 Wells Contained Water*
- *No VOCs Detected*
- *4 Semi-Volatile Compounds Detected, None above the GA Standard*
- *No Nitroaromatics Detected*
- *No PCBs or Pesticides Detected*
- *2 Metals above GA Standard*
  - *Mn and Tl*

Groundwater Sampling Summary for SEAD-17

- *Metals Detected and Criteria :*
  - *Mn (1 of 2 MWs; 73 ug/L; Secondary MCL 50 ug/L)*
  - *Tl (2 of 2 MWs; 4.7 ug/L; MCL 2 ug/L)*

Surface Water Sampling Summary for SEAD-17

- *Drainage Ditches drain to Headwaters of Kendaia Creek, Class C*
- *No VOCs, PCBs/Pesticides or Nitroaromatics Detected*
- *4 Metals, (Cu, Fe, Pb and Se) were detected above Class C Surface Water Standards*

Surface Water Sampling Summary for SEAD-17

- *Metals Detected and Class C Criteria :*
  - *Cu - 1 of 10; 33 ug/L; Class C 20 ug/L*
  - *Pb - 3 of 10; max 37 ug/L; Class C Criteria 7 ug/L*
  - *Se - 5 of 10; max 3.5 ug/L; Class C Criteria 1 ug/L*

SUMMARY OF BASELINE HUMAN HEALTH RISK ASSESSMENT SEAD-17, Existing Deactivation Furnace

EXPOSURE SCENARIO	TOTAL HAZARD INDEX	TOTAL CANCER RISK
Current on-site Worker	0.029	6.0×10^{-7}
Future on-site Industrial Worker	0.122	2.7×10^{-6}
Future on-site Construction Worker	0.84	1.3×10^{-6}
Future Trespasser (Child)	0.33	2.2×10^{-6}
EPA target value	1.0	$10^{-4} \times 10^{-6}$

Restoration Advisory Board
Meeting Agenda

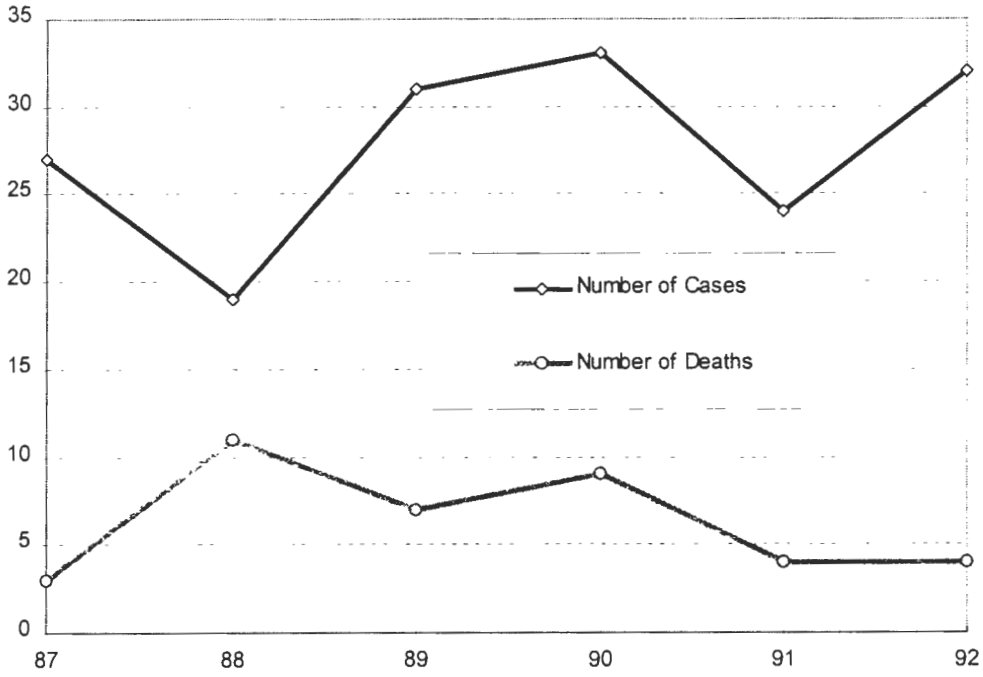
May 20, 1997

7:00	**Welcome** LTC Stephen W. Brooks Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes** Dr. Dick Durst Community Co-chair
7:10	**RAB Charter: Attendance, Meeting Frequency, Resignation** Dr. Dick Durst Community Co-chair
7:30	**Break**
7:40	**Breast Cancer Incidence in Seneca County** Ms. Betsy Lewis-Michl, Ph.D. New York State Department of Health
8:15	**Open Discussion**
8:45	**Adjourn**

Seneca County Breast Cancer Incidence, Breast Cancer Mortality, and Stage of Diagnosis 1987-1992

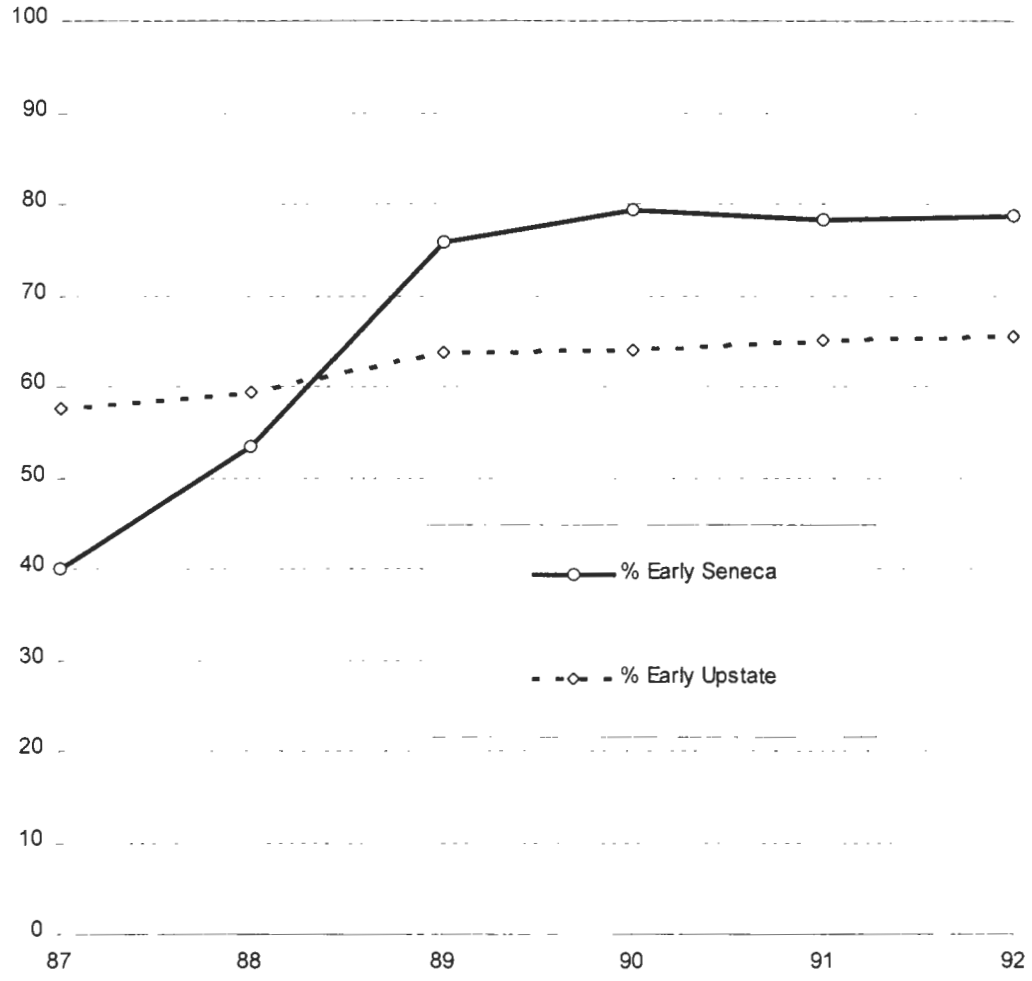
Presentation to Restoration Advisory Board
Seneca Army Depot
May 21,1997

Chart 1
Breast Cancer Incident Cases and Breast Cancer Deaths
Seneca County 1987-1992
Data from New York State Cancer Registry



Year	Number of Cases	Number of Deaths
87	27	3
88	19	11
89	31	7
90	33	9
91	24	4
92	32	4

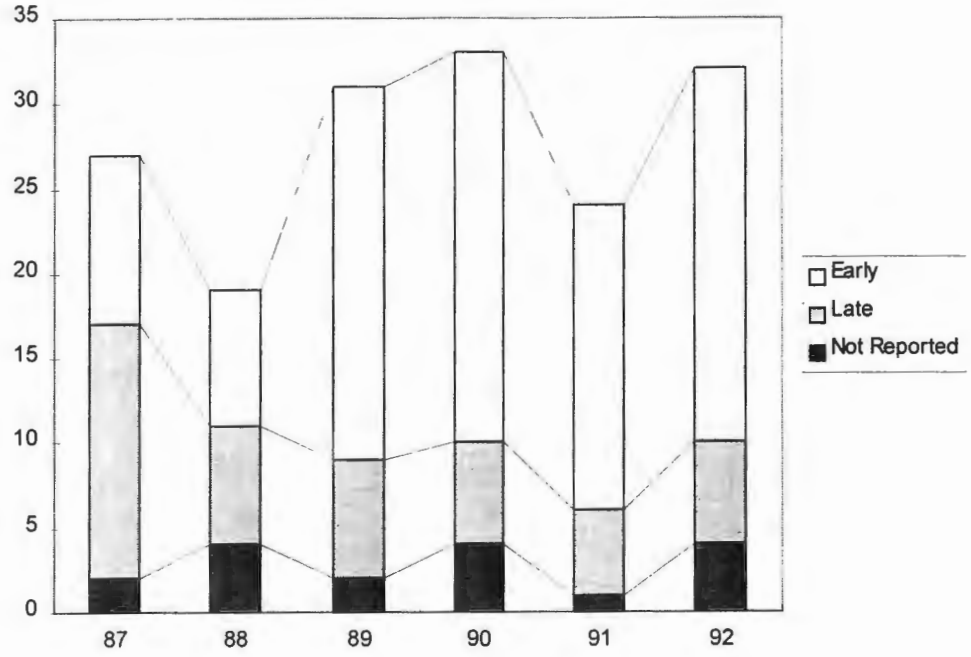
Chart 3
Percent of Breast Cancer Cases* which are Localized at Diagnosis
(% Early Diagnoses)
Seneca County and Upstate New York
1987-1992
Data from the New York State Cancer Registry



Year	% Early Seneca	% Early Upstate
87	40	57.5
88	53.3	59.4
89	75.9	63.8
90	79.3	64
91	78.3	65.1
92	78.6	65.5

*Percent of Cases for which stage of diagnosis is reported.

Chart 4
Incident Breast Cancers by
Stage of Diagnosis
Seneca County, 1987-1992
Data from New York State Cancer Registry



MINUTES
RESTORATION ADVISORY BOARD
MAY 20, 1997 MEETING

1. Attendance:

Government RAB Members Present:

Carla Struble, U.S. Environmental Protection Agency
Dan Geraghty, NYS Department of Health

Government RAB Members Not Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Kamal Gupta, NYS Department of Environmental Conservation

Community RAB Members Present:

Dick Durst/Community Co-Chair, Anne Herman, Richard Sisson, Henry Van Ness, Pat Jones, Brian Dombrowski, Mary Ann Krupsak, Lucinda Sangree, Ken Reimer

Community RAB Members Not Present:

Harold Kugelmass, Russell Miller, Richard Lewis, Carmen Serrett, Estelle Coleman, Frank Ives, David Wagner

Environmental Support Personnel Present:

Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Susan Cooper, SEDA Secretary
Joanne Ogden, SEDA Legal Rep/Public Affairs Officer
Keith Hoddinott, U.S. Army Center for Health Promotion & Preventive Medicine
Robert Scott, NYS Department of Environmental Conservation
Betsy Lewis-Michl, NYS Department of Health

Community Support (from sign-in sheet):

Brooke Brewer, Community Member
Faye Jensen, Community Member
Heather Clark, Community Member
Eileen Alexander, Community Member
Yolande Goltry, Community Member
June Allen, Community Member

Sandra Bartlett, Community Member
Betty Serven, Community Member
Barbara Messur, Community Member
Gail Serven, Community Member
Diane Reimer, Community Member
Mary LeClair, Finger Lakes Times

2. Dick Durst, the Community Co-Chair, welcomed members and support staff to the May Restoration Advisory Board at the Officers' Club, outlined the evening's agenda, and asked for introductions.

3. Minutes from March's RAB meeting were approved, signed, and accepted into record.

4. The first item for discussion was the high rate of absenteeism at the RAB meetings. Several members have missed numerous meetings. Dick Durst asked the members present what constitutes acceptable attendance. Several suggestions were presented:

a. Generate a periodic form to be sent to members who have had excessive absences requesting their intentions to remain on the RAB.

b. Extend an invitation to community members who regularly attend the RAB meetings to participate and apply for membership.

c. Have an open enrollment period to solicit new members.

d. Develop a quarterly newsletter for individuals interested in being on a mailing list.

The frequency of meetings was deemed acceptable and will remain on a monthly basis.

5. Betsy Lewis-Michl from the New York State Department of Health, Bureau of Environmental and Occupational Epidemiology, gave a presentation on Breast Cancer Incidence in Seneca County. The available data from the New York State Cancer Registry was collected from 1940 to 1992. Information for 1993 to 1997 is currently being entered into the State's computerized database. Although rates of breast cancer have increased in all counties in New York State, the charts indicate the incidence rate of breast cancer to be elevated in Seneca County when compared to the New York State average. It is believed this higher rate is

due to the excellent screening programs in Seneca County. The mortality rates are equal to the state average. Early diagnosis and treatment contribute to this stabilized mortality rate.

a. Questions arose as to inclusion of specific groups in the available data. The former Willard Psychiatric Center was not included in the findings, although it should have been since they were considered a long-term institution. The Amish community was not considered a contributing factor in the data.

b. Breast cancer risk factors were discussed. These risk factors include smoking, endocrine disruptions, diet, air pollution, environmental factors, disruption of hormonal activity, births over age 30, and the use of pesticides. The effect of pesticides on the female population in or around farms is being further studied with the assistance of the New York State Farm Bureau.

6. Open discussion followed with solicitation of future topics. A request was made for clarification of which sites are being monitored for environmental purposes and what is the monitoring showing.

7. The next Restoration Advisory Board meeting will be held on July 15, 1997 at 7:00 p.m. in the SEDA NCO Club.

8. The meeting was adjourned at 8:40 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

MINUTES
RESTORATION ADVISORY BOARD
JULY 15, 1997 MEETING

1. Attendance:

Government RAB Members Present:

Carla Struble, U.S. Environmental Protection Agency
Dan Geraghty, NYS Department of Health
Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair

Government RAB Members Not Present:

Marsden Chen, NYS Department of Environmental Conservation

Community RAB Members Present:

Harold Kugelmass, Anne Herman, Frank Ives, Ken Reimer

Community RAB Members Not Present:

Dick Durst/Community Co-Chair, Russell Miller, Richard Lewis, Carmen Serrett, Estelle Coleman, Richard Sisson, Pat Jones, Brian Dombrowski, Mary Ann Krupsak, Lucinda Sangree, David Wagner, Henry Van Ness

Environmental Support Personnel Present:

LTC Donald Olson, SEDA Commander
Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Janet Fallo, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Susan Cooper, SEDA Secretary
Joanne Ogden, SEDA Legal Rep/Public Affairs Officer
Keith Hoddinott, U.S. Army Center for Health Promotion & Preventive Medicine
Jeff Waugh, Army Environmental Center
Bob Radkiewicz, HQ IOC
Ed Agy, HQ IOC
Dorothy Richards, U.S. Army Corps of Engineers, Huntsville Division
Kevin Healy, U.S. Army Corps of Engineers, Huntsville Div

Community Support (from sign-in sheet):

Heather Clark, Community Member
Gerry DeCuollo, OHM Corp, Trenton, NJ

2. Stephen Absolom, the Army Co-Chair, welcomed members and support staff to the July Restoration Advisory Board at the NCO Club and outlined the evening's agenda. He then introduced Seneca's new Commander, LTC Donald Olson, who provided opening remarks for his participation in the RAB and asked for introductions of all attending the evening's meeting.

3. Minutes from May's RAB meeting were discussed with changes to be made for approval and signature at the next meeting.

4. Tom Enroth from Seneca's Resident Office, U.S. Army Corps of Engineers, gave a presentation covering the Peer Review Process held April 1-4, 1997. The purpose of the Peer Review was to conduct a review of restoration projects by a team of experts from government and nongovernment agencies to ensure efficient and effective use of funds. This review is a pilot study which may be performed on an annual basis at all Army installations. Seneca was one of four installations that hosted a Peer Review. The recommendations and Seneca's implementation of those recommendations were discussed with the following questions being generated.

a. **Question:** Will there be a slowdown of projects due to this review?
Answer: A temporary slowdown may be seen, but an eventual acceleration of projects will be realized. As time is freed up from performing lengthy studies, a proactive, aggressive approach would be used to accelerate remediation.

b. **Question:** How can the Peer Review team ensure effectiveness?
Answer: The Peer Review personnel from the Army Environmental Center are monitoring the process. Instituted recommendations will be looked at to determine if the Peer Review was successful.

c. **Question:** How many sites were looked at during the Peer Review?
Answer: 15 projects were reviewed—some of these included multiple sites. The qualifier was a dollar threshold.

Over $2 million associated with a project dictated which were reviewed.

d. **Question:** Once the cleanup is accomplished, what is the public's assurance that the site is actually clean?

Answer: The government must have concurrence by the regulators from New York State and the Environmental Protection Agency before cleanup at a site has been deemed completed. All documents pertaining to each site are available for review in the Administrative Record located at the Seneca Army Depot Activity. The RAB is the liaison with the community.

5. Stephen Absolom reported on the upcoming Open Burning Grounds Public Meeting. A date for the public meeting needs to be set. There was an agreement that the RAB convene before the public meeting in order to review the plan for the Open Burning Grounds. The RAB members would be helpful in explaining the process and recommended technology to the public as their liaison between the community and the Army.

6. A briefing on a few Remedial Action Technologies was given by Michael Duchesneau of Parsons Engineering Science. The technologies included soil washing, solidification/ stabilization, and bioventing. The goal of soil washing is to reduce volume, concentrate contaminated material, and landfill the end residuals. Solidification/stabilization "binds" contaminated material into a solidified matrix for landfilling. Bioventing enhances the natural degradation of hydrocarbons by injecting air into the ground, increasing available oxygen for microbes in the soil.

a. **Question:** When residuals from solidification/ stabilization are mixed with asphalt and used for road surface, doesn't the material eventually break down, repeating the concern for contamination to the environment?

Answer: The solidified material is combined with a base material used for paving which remains in place for a long period of time. This material is no more hazardous than the material used because the solidified material is chemically bound.

b. **Question:** Does climate affect the bioventing process?

Answer: Although the ground's top layers may be frozen in the winter months, there is degradation of hydrocarbons below the frost line. Air pumps at the surface would be subject to the winter climate which may cause problems mechanically and with site access.

c. **Question:** Is there a liability to the original owner of solidified material if dug up years later?

Answer: The property transfer would require a disclosure identifying the solidified material present.

d. **Question:** When landfilling solidified material, would we use up all the available space for household garbage in the future years?

Answer: The popularity of recycling has made a significant impact to where the price is driven down and there is a considerable amount of space available. We will be occupying some landfill space, but won't use it up.

e. **Question:** Was there air monitoring done at the Open Burning Grounds?

Answer: Downwind locations were tested with nothing of concern found.

7. Open discussion generated more dialogue regarding attendance at the RAB meetings. Survey responses forwarded last month have been low. Contact by phone will be made to those members who did not respond to see if they are interested in continuing their membership in the RAB. It was also agreed that additional members would be solicited if at least two people resigned. Future topics proposed included review of the RAB charter to address attendance as well as review of the FY98 programs and the future list of projects we would like to accomplish.

8. The next Restoration Advisory Board meeting will be held on August 19, 1997 at 7:00 p.m. in the SEDA NCO Club.

9. The meeting was adjourned at 9:15 p.m.

Respectfully submitted,

Susan R. Cooper

SUSAN R. COOPER
Secretary

APPROVED AS SUBMITTED:

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

Restoration Advisory Board
Meeting Agenda

July 15, 1997

7:00	**Welcome/Introduction of LTC Donald C. Olson** Mr. Stephen M. Absolom Army Co-chair
7:15	**Acceptance of Minutes** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
7:20	**Peer Review Process** Mr. Thomas R. Enroth Project Engineer, U.S. Army Corps of Engineers, New York District
7:35	**Open Burning Grounds Public Meeting** Mr. Stephen M. Absolom Army Co-chair
7:55	**Break**
8:05	**Soil Cleanup Technologies** Mr. Michael Duchesneau, P.E. Project Manager, Parsons Engineering Science, Inc.
8:30	**Open Discussion**
9:00	**Adjourn**

Peer Review

Thomas R. Enroth
July 15, 1997

Peer Review Presentation

- Purpose
- Background
- Pilot Study at Seneca
- Peer Review Recommendations
- Implementation of Recommendations
- Summary

Purpose

- Review of Restoration projects to ensure efficient and effective use of funds
- Army Environmental Center was tasked by the BRAC Office to organize a team of experts from government and non-government agencies to perform the review

Background

- Draft concept plan developed Feb 1997
- Two levels of pilot studies: Level I is more detailed, Level II is less detailed
- Four pilot studies performed- two at Level I and two at Level II
- Performed first Level I pilot review at Seneca April 1-4, 1997

Pilot Study at Seneca

- Prior to the review, Seneca filled out detailed questionnaires and prepared narratives on each project to give the team background before the visit
- April 1-4, 1997, Seneca presented projects to the team with support from the Corps of Engineers and Parsons Engineering Science

Pilot Study at Seneca (cont.)

- The Peer Review team included professionals in various fields:
  - Hydrogeologist
  - Toxicologist
  - Health Physicist
  - Decision Analyst
  - Risk Management Specialist
  - Technology Demonstration Specialist

Pilot Study at Seneca (cont.)

- BRAC Cleanup Team members were present at Peer Review to support Seneca's projects
- Peer Review team provided a report of recommendations to Seneca
- Seneca is in the process of addressing the recommendations

Peer Review Recommendations

- Reduce laboratory costs by incorporating more field screening techniques
- Develop installation-wide background concentrations for contaminants in soils and groundwater

Peer Review Recommendations (cont.)

- Change decision making process to accelerate site cleanup by identifying and conducting removal actions before completion of Feasibility Study phase
- Strongly consider intrinsic bioremediation for cleanup of petroleum contaminated sites

Implementation of Recommendations

- Seneca needs to modify existing contracts and the overall process to address the recommendations
- Coordination with regulators is required before changes are implemented

Summary

- Peer Review may be performed on an annual basis at all Army installations as a result of pilot studies
- Peer Review was designed to ensure efficient and effective use of environmental funds

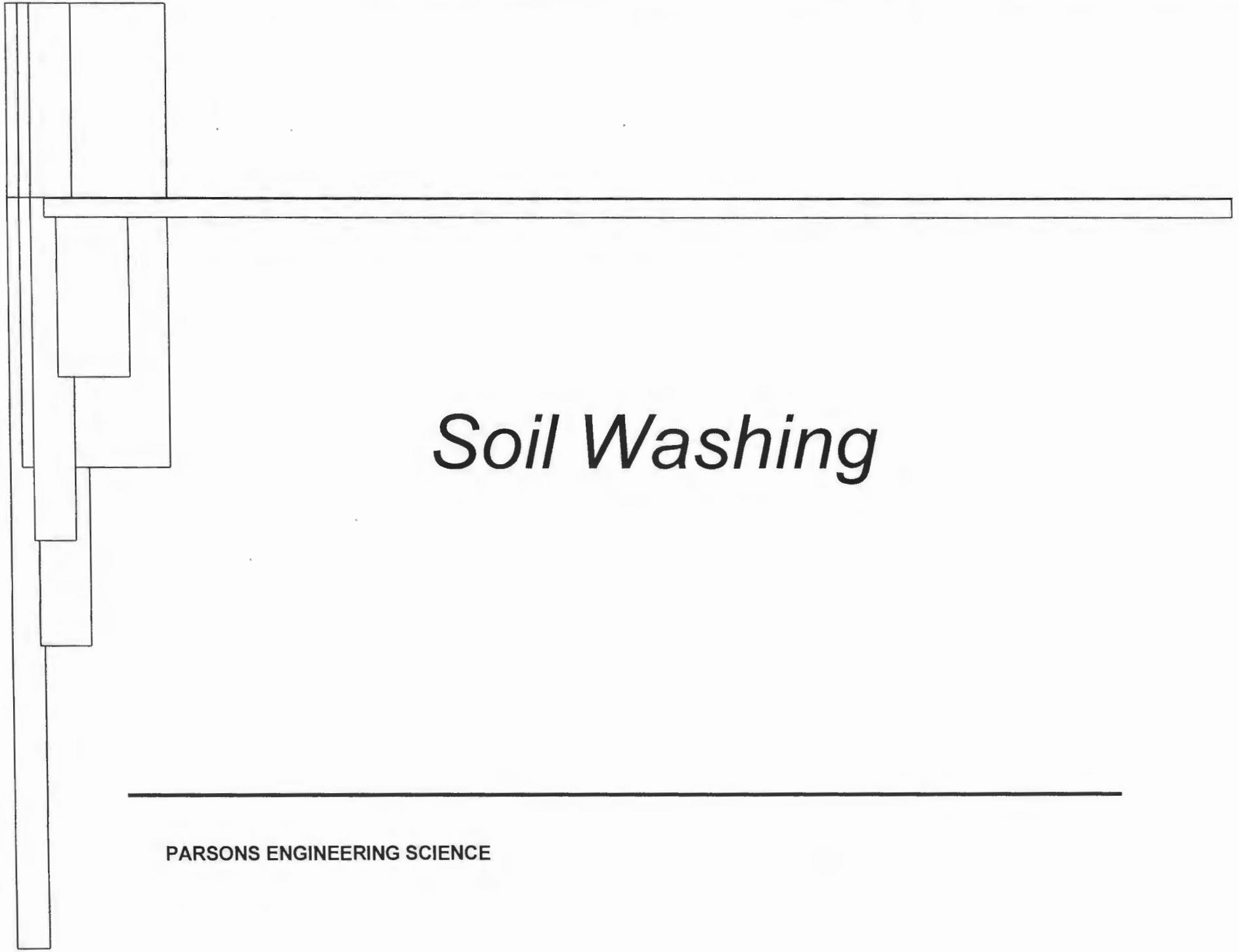
Presentation to the RAB
July 15, 1997

Remedial Action Technologies

Michael Duchesneau, P. E.

Technologies to be Discussed

- *Soil Washing*
- *Solidification/Stabilization*
- *Bioventing*



Soil Washing

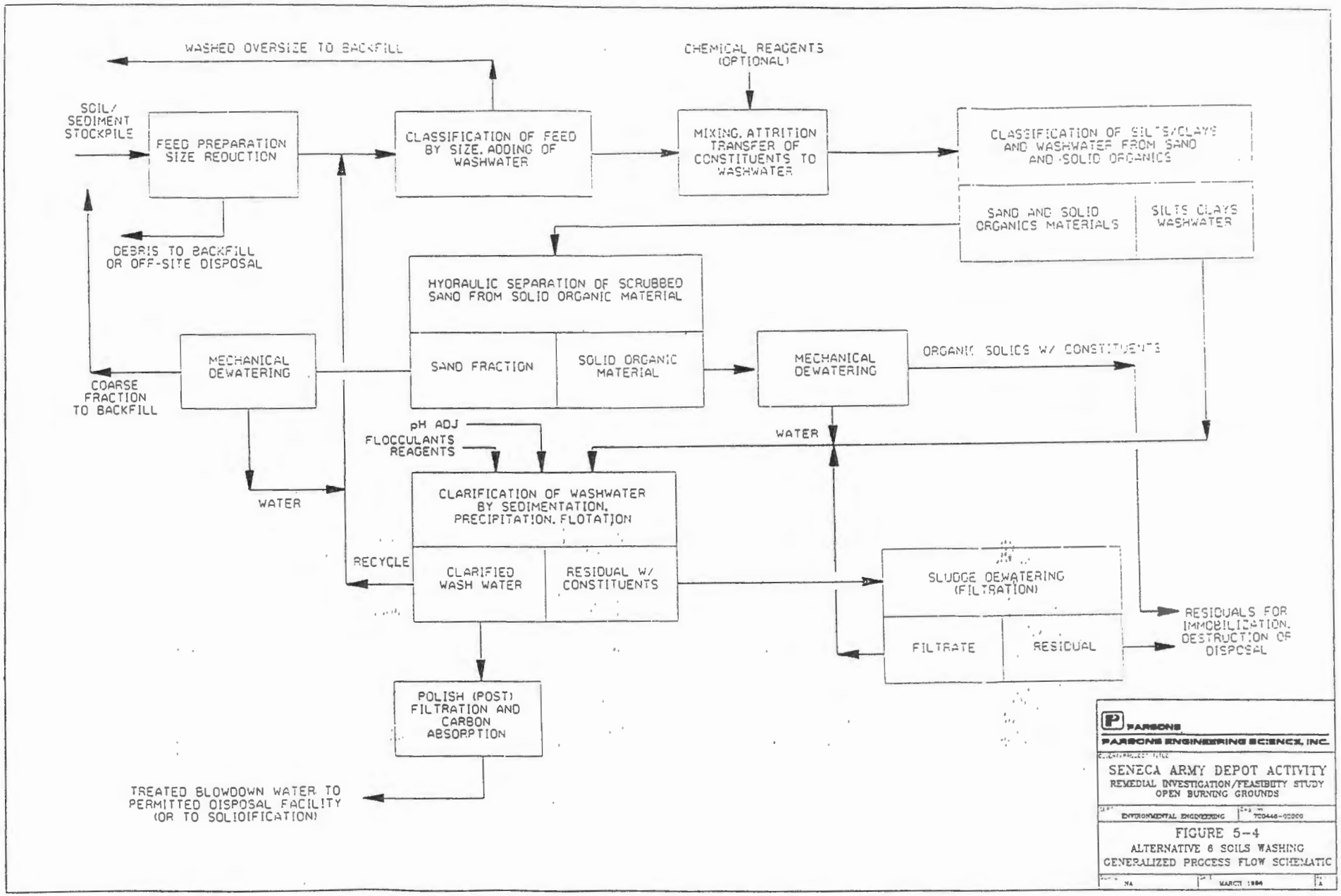
PARSONS ENGINEERING SCIENCE

Soil Washing

- *Technology Developed from Mining Operations*
- *Goal is Volume Reduction*
- *Excavation, Separation, Replace Clean Soil, Acid Leaching/Metals Recovery, Landfill*
- *Particle Size Separation Achieved using:*
  - *Vibrating Screens*
  - *Rotary Attrition Scrubbers*
  - *Hydrocyclones*
  - *Froth Flotation*

Soil Washing
Principal Process Steps

- *Feed Preparation*
  - *Crushing, Removal of Debris*
- *Mixing, Attrition Scrubbing, Surficial Extraction*
  - *Clay/Silts are Seperated from Sands*
- *Separation of Clay/Silt & Wash Water from Scrubbed Granular Materials*
  - *Dewatered Solids and Wash Water with Clay/Silt*
- *Removal of Clay/Silt from Wash Water*
  - *Chem. Precipitation used to Removal Clay and Metals*
- *Management of Residuals*


WASHED OVERSIZE TO BACKFILL
CHEMICAL REAGENTS (OPTIONAL)
SOIL/ SEDIMENT STOCKPILE
FEED PREPARATION SIZE REDUCTION
CLASSIFICATION OF FEED BY SIZE. ADDING OF WASHWATER
MIXING. ATTRITION TRANSFER OF CONSTITUENTS TO WASHWATER
CLASSIFICATION OF SILTS/CLAYS AND WASHWATER FROM SAND AND SOLID ORGANICS
SAND AND SOLID ORGANICS MATERIALS
SILTS CLAYS WASHWATER
DEBRIS TO BACKFILL OR OFF-SITE DISPOSAL
HYDRAULIC SEPARATION OF SCRUBBED SAND FROM SOLID ORGANIC MATERIAL
SAND FRACTION
SOLID ORGANIC MATERIAL
MECHANICAL DEWATERING
COARSE FRACTION TO BACKFILL
MECHANICAL DEWATERING
ORGANIC SOLIDS W/ CONSTITUENTS
pH ADJ
FLOCCULANTS REAGENTS
WATER
WATER
CLARIFICATION OF WASHWATER BY SEDIMENTATION. PRECIPITATION. FLOTATION
RECYCLE
CLARIFIED WASH WATER
RESIDUAL W/ CONSTITUENTS
SLUDGE DEWATERING (FILTRATION)
FILTRATE
RESIDUAL
RESIDUALS FOR IMMOBILIZATION. DESTRUCTION OR DISPOSAL
POLISH (POST) FILTRATION AND CARBON ABSORPTION
TREATED BLOWDOWN WATER TO PERMITTED DISPOSAL FACILITY (OR TO SOLIDIFICATION)
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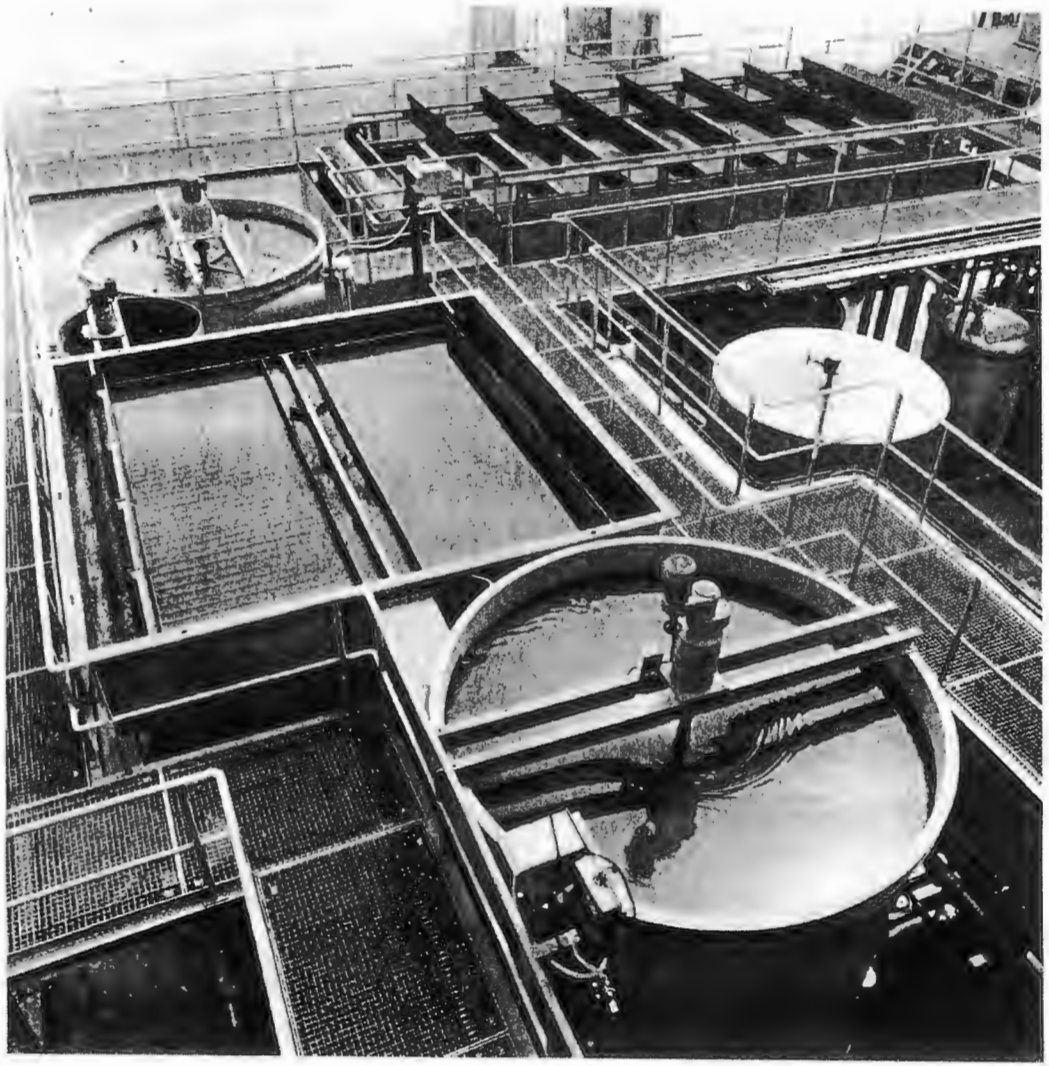
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS
ENVIRONMENTAL ENGINEERING
720446-02000
FIGURE 5-4
ALTERNATIVE 6 SOILS WASHING
GENERALIZED PROCESS FLOW SCHEMATIC
NA
MARCH 1994
A

Soil Washing

- *Advantages :*
  - *Volume Reduction*
  - *Metals Leaching/Extraction can be Added*
  - *Proven Technology*
  - *Resource Recovery is Possible*
- *Disadvantages:*
  - *Water Intense Operation*
  - *Heavy, Specialized, Equipment Required*
  - *Costly*
  - *Landfilling is Required as Final Disposal*

Plant Layout
Soil Washing

Soil Washing Unit Operations



Disolved Air Floation

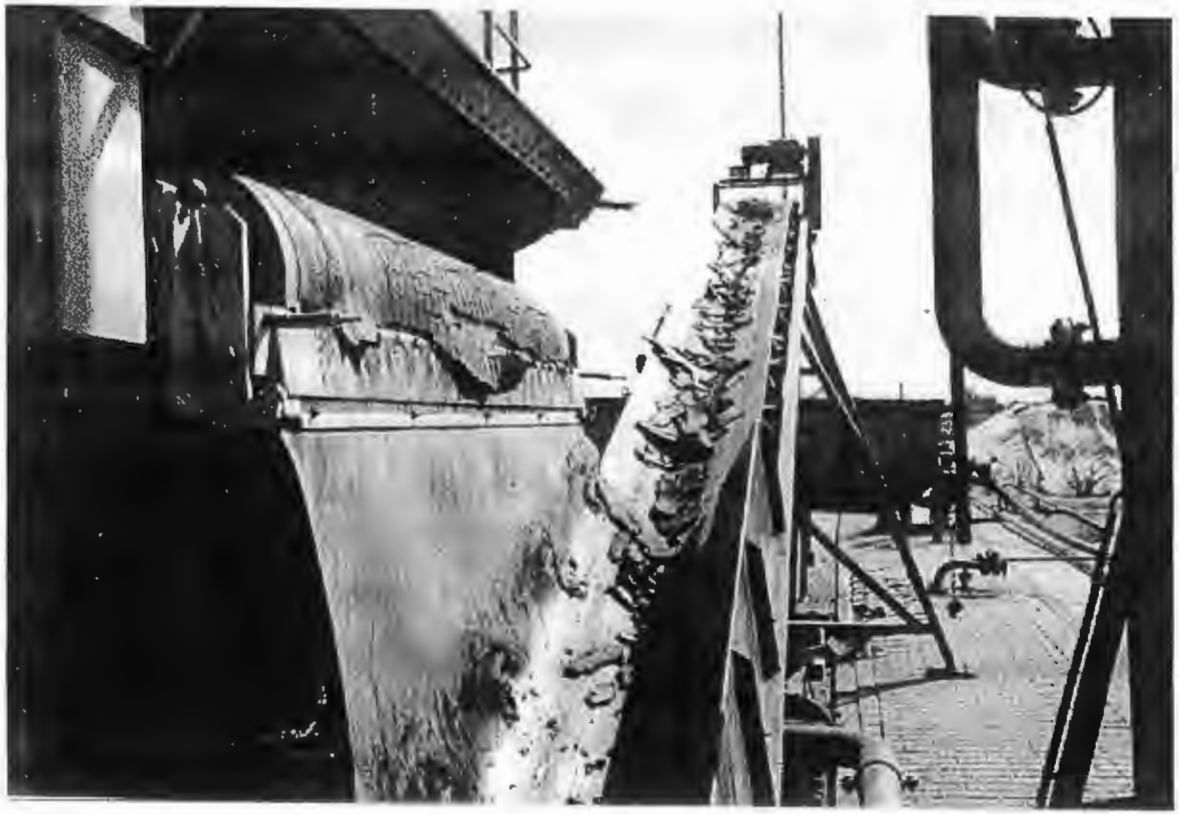
Lamella Plate Clarifier

Mixing Tank

Soil Washing Unit Operations

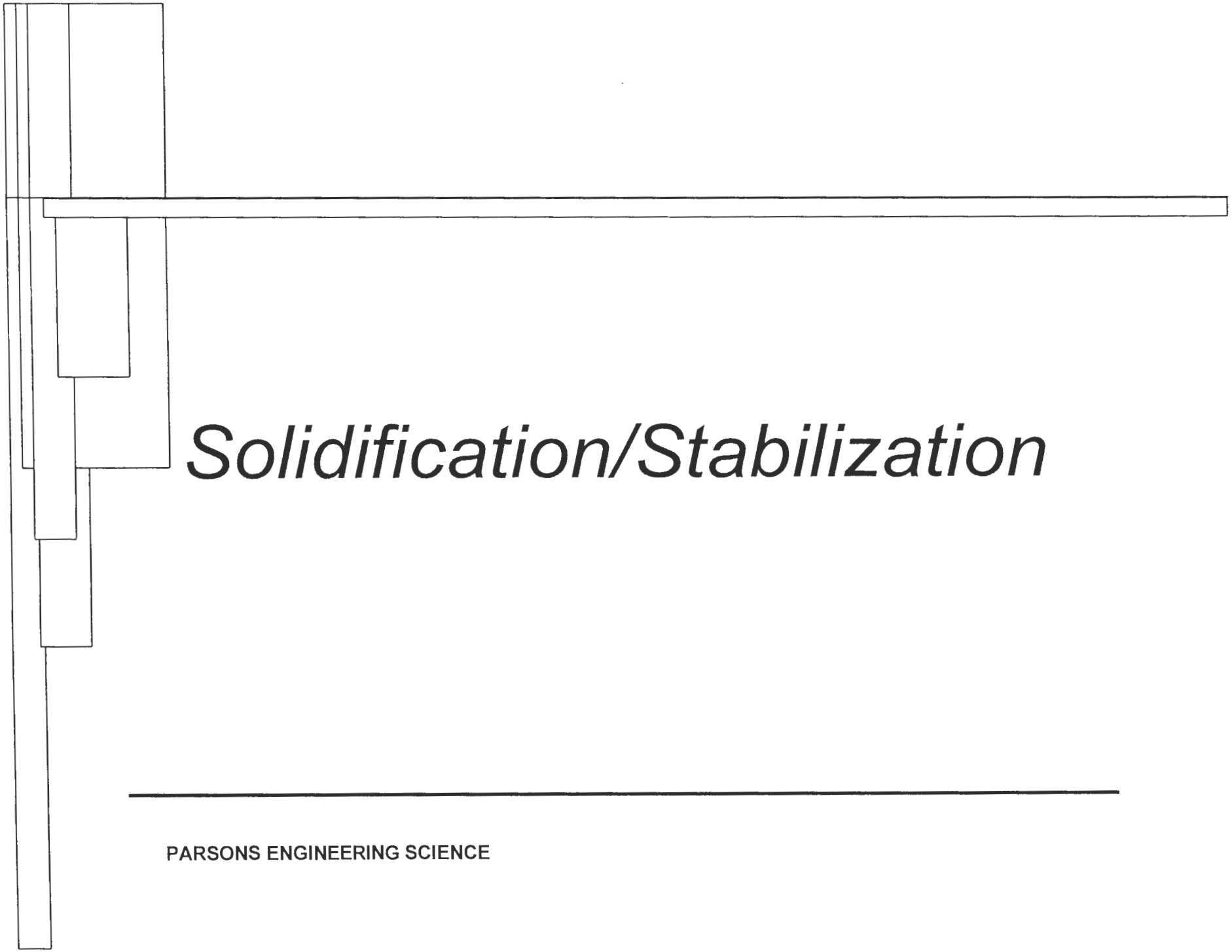
Residuals including Precipitated Heavy Metals and Organics prior to Dewatering in Belt Filter Press

Soil Washing Unit Operations



Filter Cake Produced Following Dewatering in Belt Filter Press

Soil Washing Unit Operations

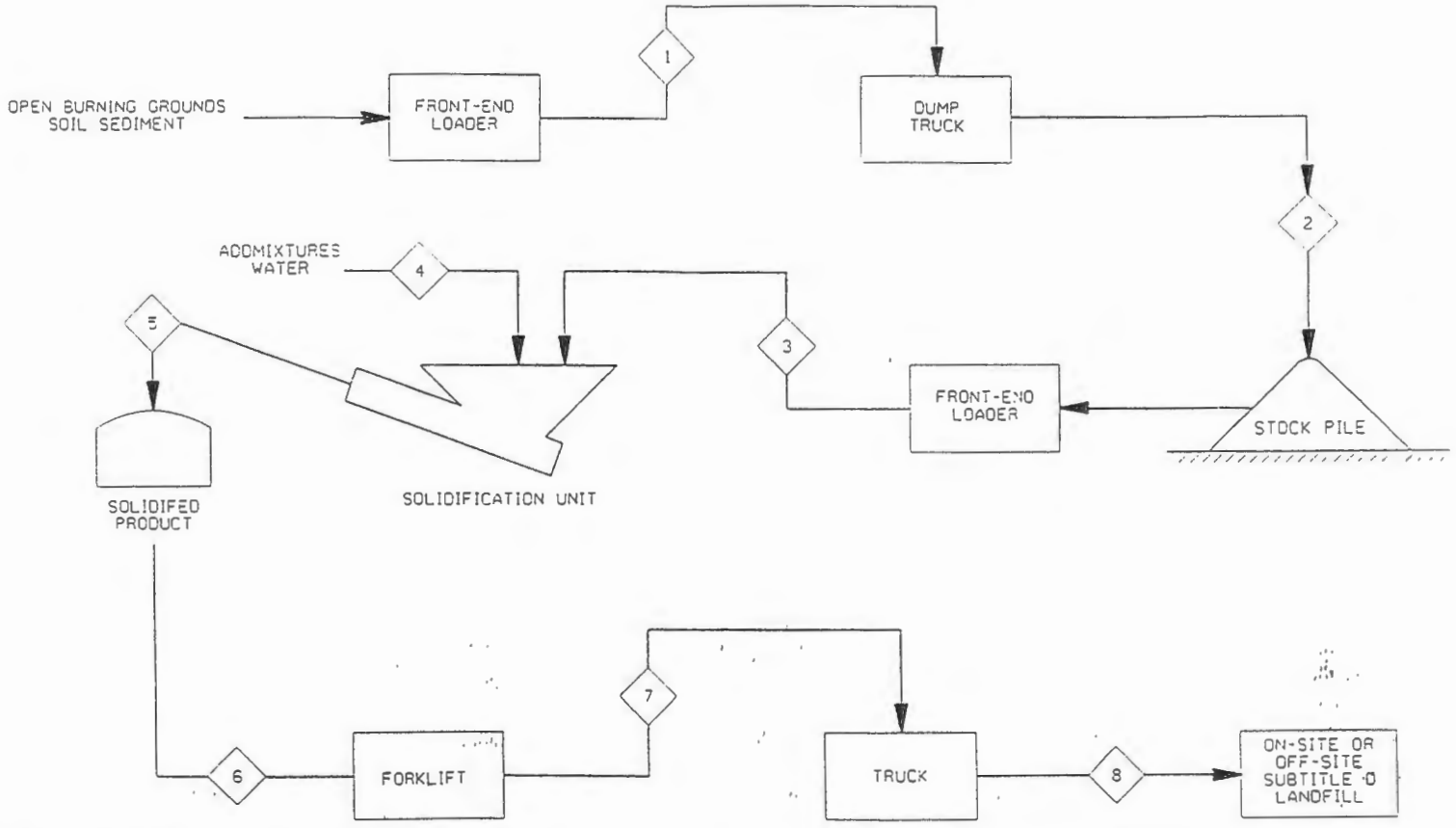


Solidification/Stabilization

PARSONS ENGINEERING SCIENCE

Solidification/Stabilization

- *Immobilization Technology*
- *Constituents of Concern are "bound" within a Solidified Matrix*
- *Solidifying Agents Include:*
  - *Sorbents (lime, fly ash, clay, kiln dust, zeolites)*
  - *Lime/Fly Ash Pozzolan (Silica)*
  - *Pozzolan-Portland Cement*
  - *Asphaltic Materials (Cold Patch or Hot Mix)*



TYPICAL FLOW RATES

MATERIAL	STREAM NO.													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SOIL/SEDIMENT (CY/HR)	50	50	40											
SOLIDIFIED PRODUCT (CY/HR)					60	60	60	60						
ADMIXTURES / WATER (CY/HR)				20										

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PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS

ENVIRONMENTAL ENGINEERING | 720448-20000

FIGURE 5-1
ALTERNATIVE 4 AND 5
SOLIDIFICATION/SUBTITLE D LANDFILL

NA | MARCH 1996

Solidification/Stabilization

- *Advantages :*
  - *Proven Technology (BDAT for metals)*
  - *Simple*
  - *Generally Less Costly than Washing*
- *Disadvantages:*
  - *Effectiveness is Matrix Dependent*
    - *High Clay Soils cause Clumping*
    - *High Oil Content Decrease Effectiveness*
  - *Volume of Material is Increased*

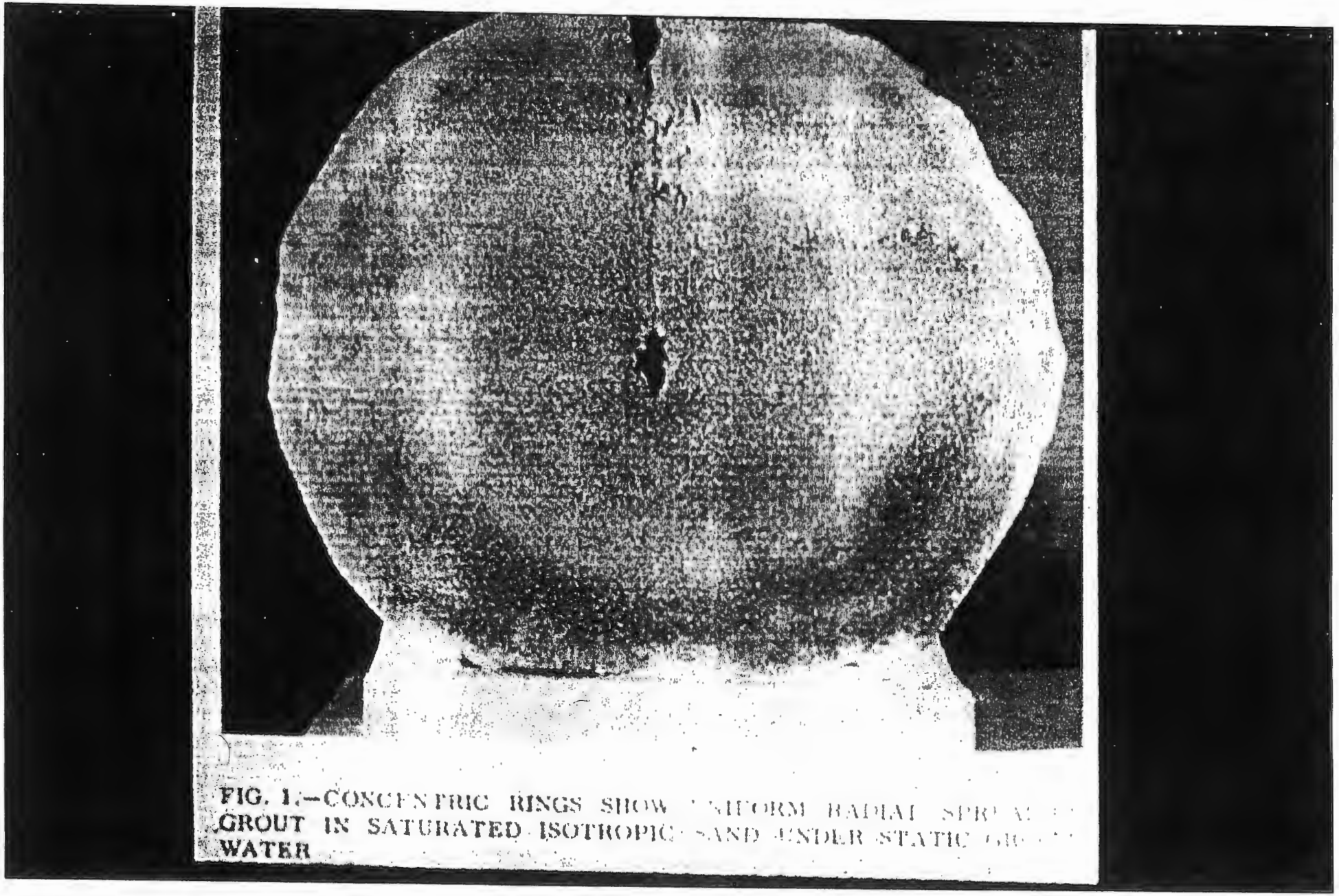
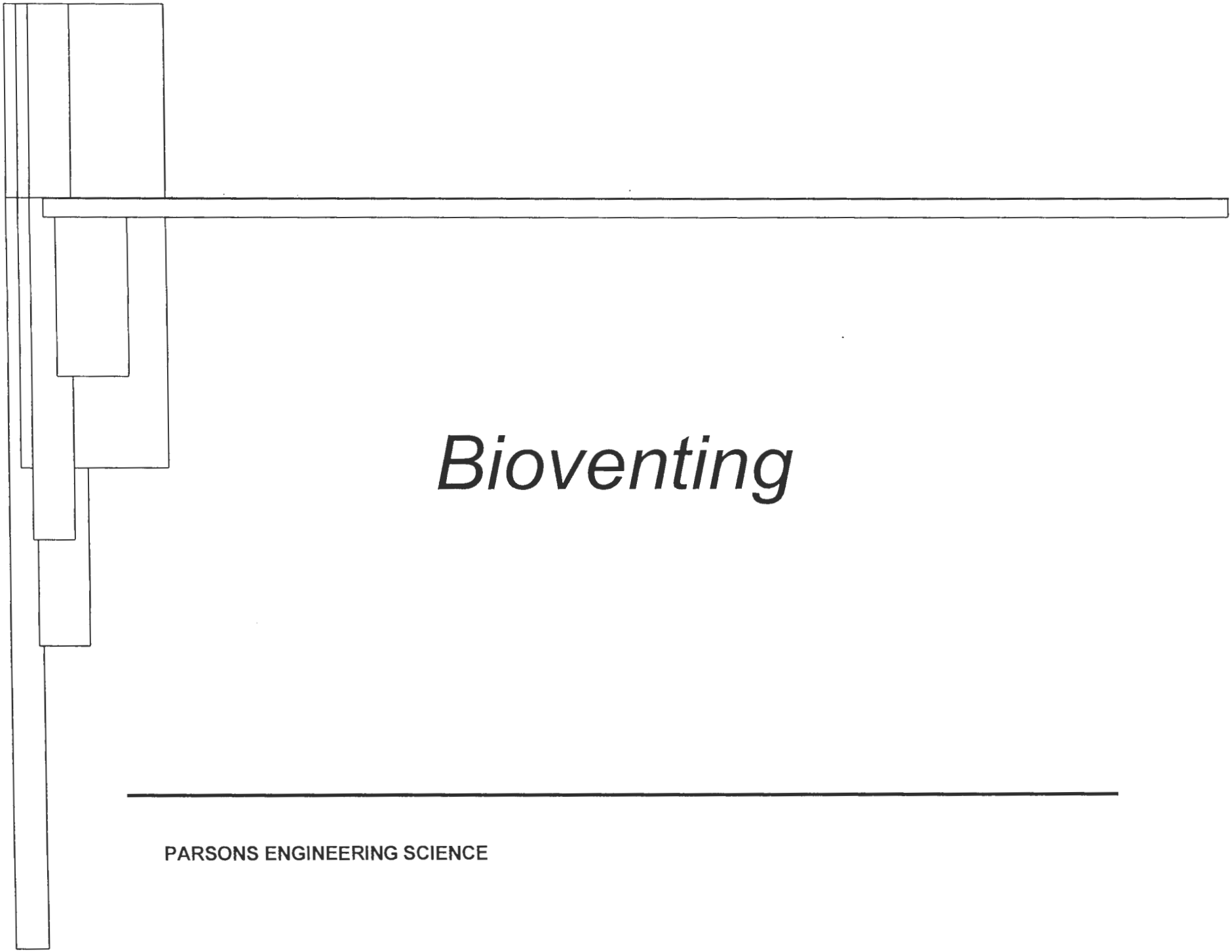


FIG. 1.—CONCENTRIC RINGS SHOW UNIFORM RADIAL SPREAD OF GROUT IN SATURATED ISOTROPIC SAND UNDER STATIC GROUND WATER



Bioventing

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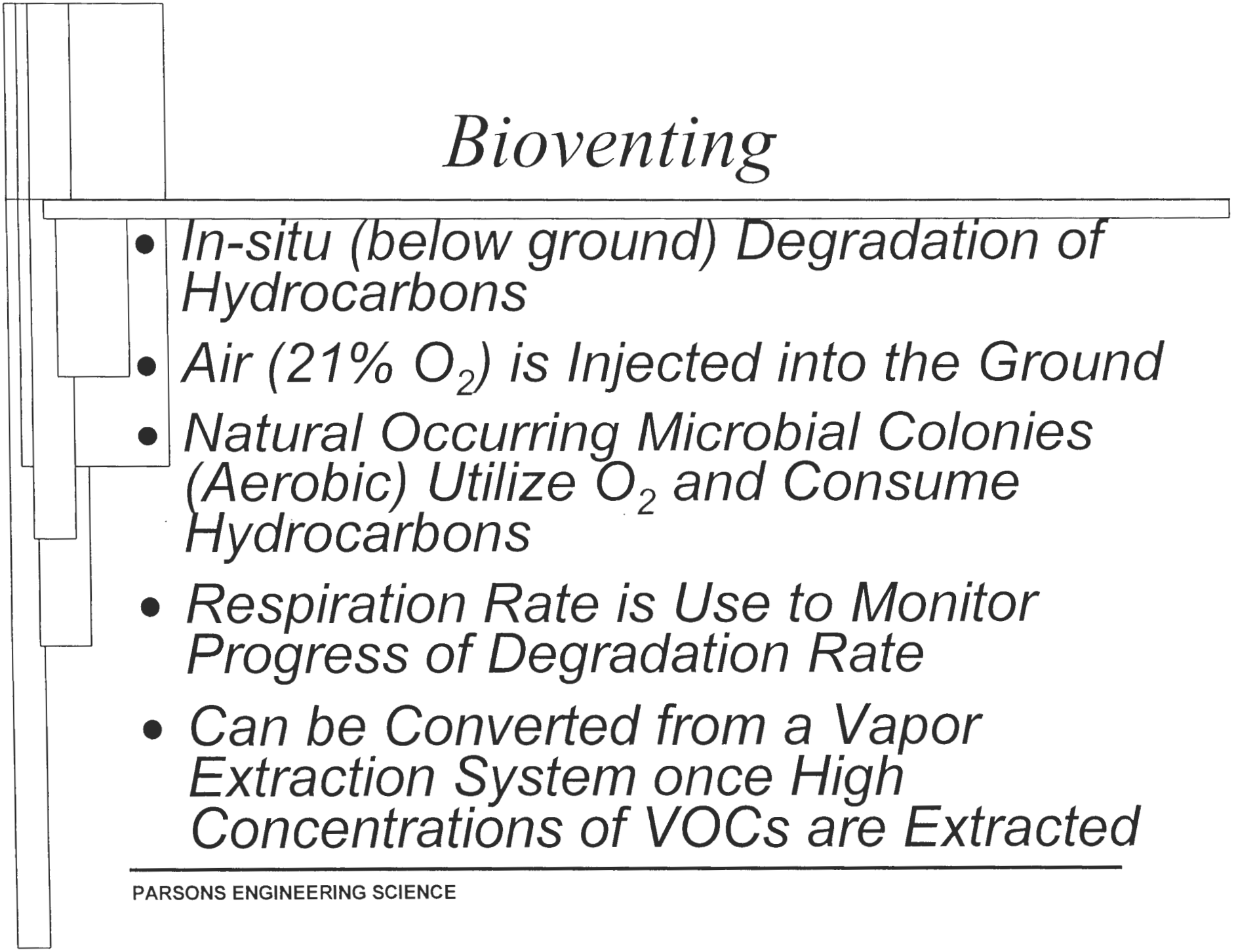
Bioventing



- *In-situ (below ground) Degradation of Hydrocarbons*
- *Air (21% O_2) is Injected into the Ground*
- *Natural Occurring Microbial Colonies (Aerobic) Utilize O_2 and Consume Hydrocarbons*
- *Respiration Rate is Use to Monitor Progress of Degradation Rate*
- *Can be Converted from a Vapor Extraction System once High Concentrations of VOCs are Extracted*

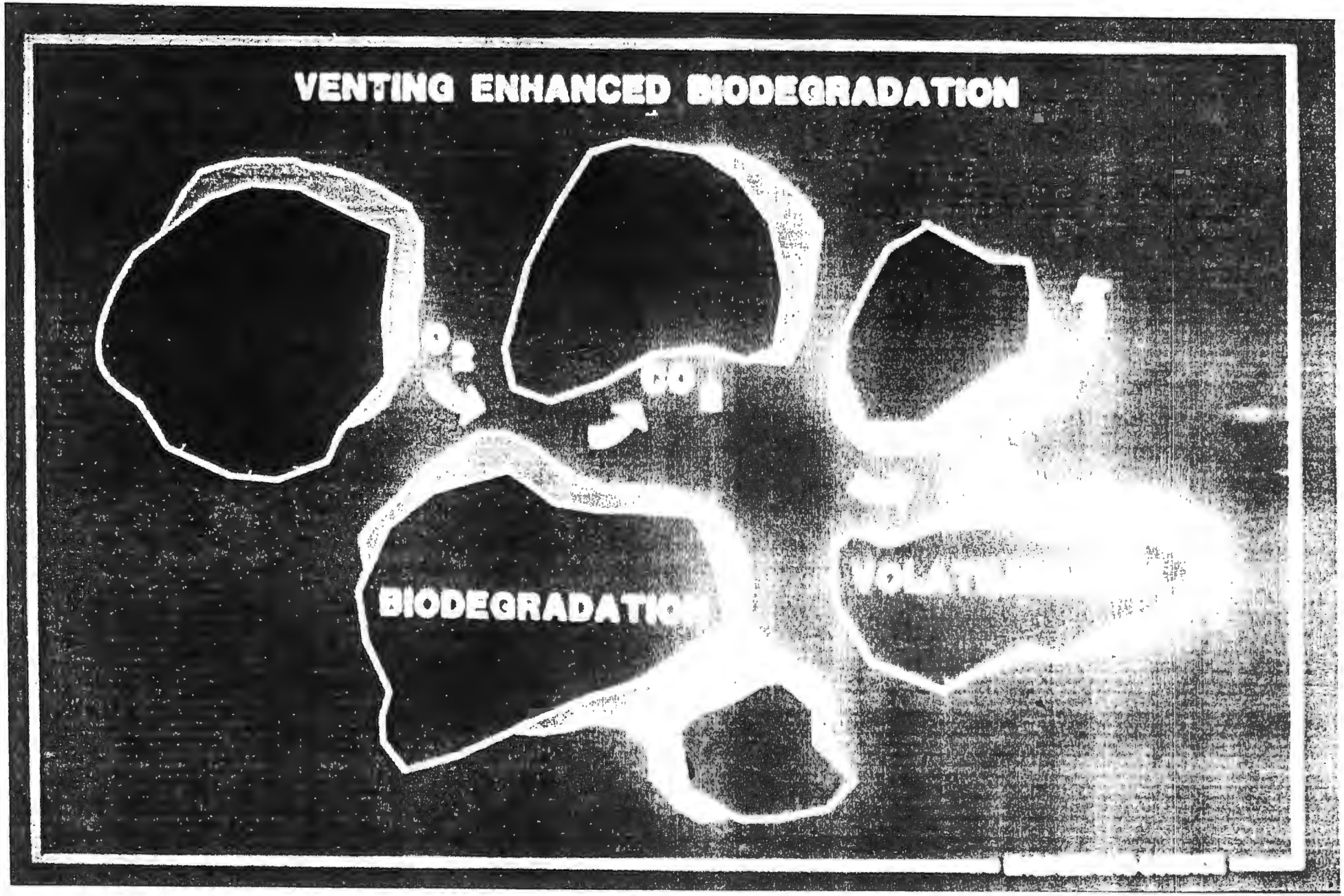
Aerobic Biodegradation – Respiration

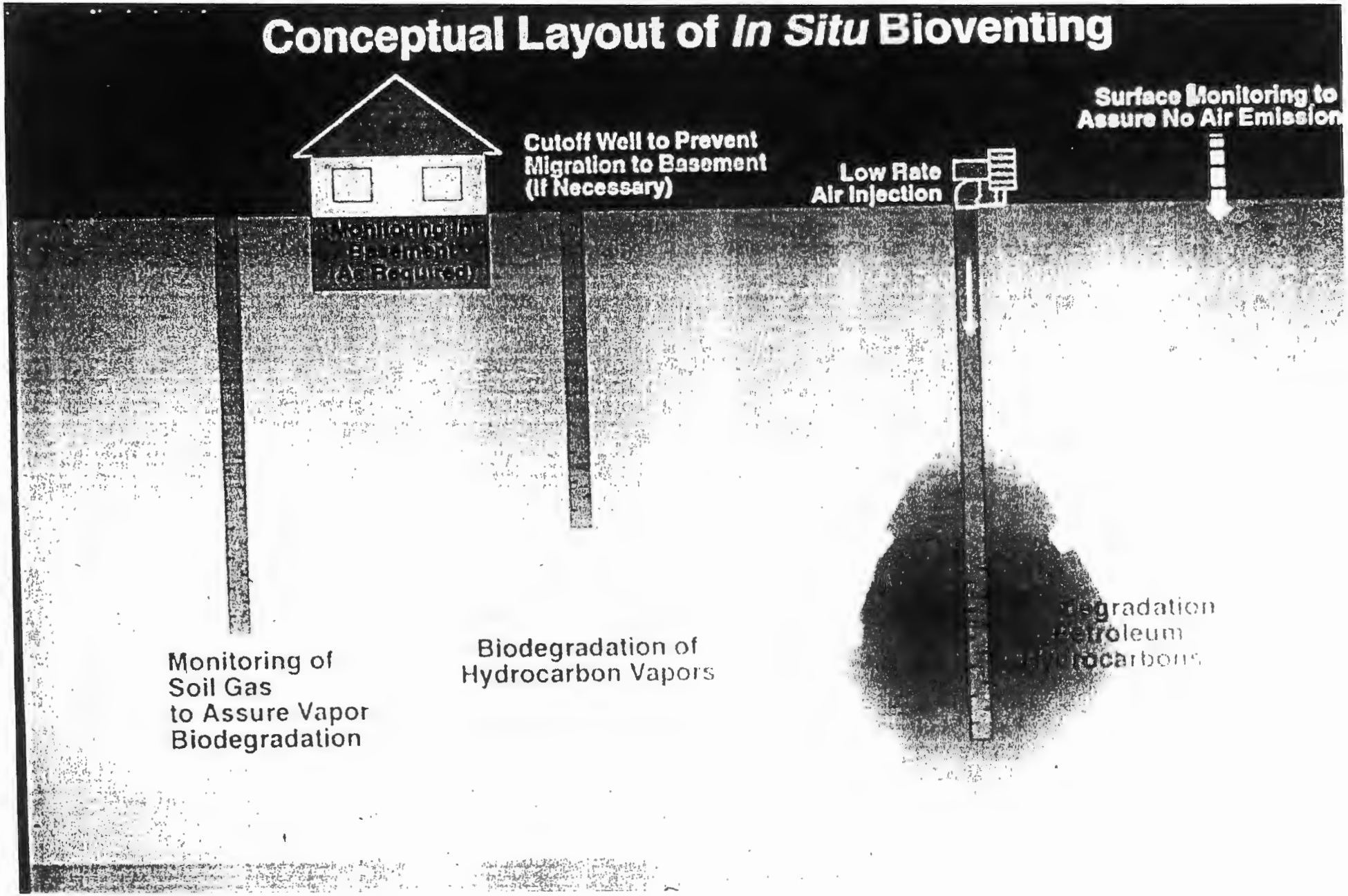
$$C_6H_6 + 7\frac{1}{2}O_2 \longrightarrow 6\,CO_2 + 3\,H_2O$$

3.1 lb O_2/lb C_6H_6

$$C_6H_{14} + 9\frac{1}{2}O_2 \longrightarrow 6\,CO_2 + 7\,H_2O$$

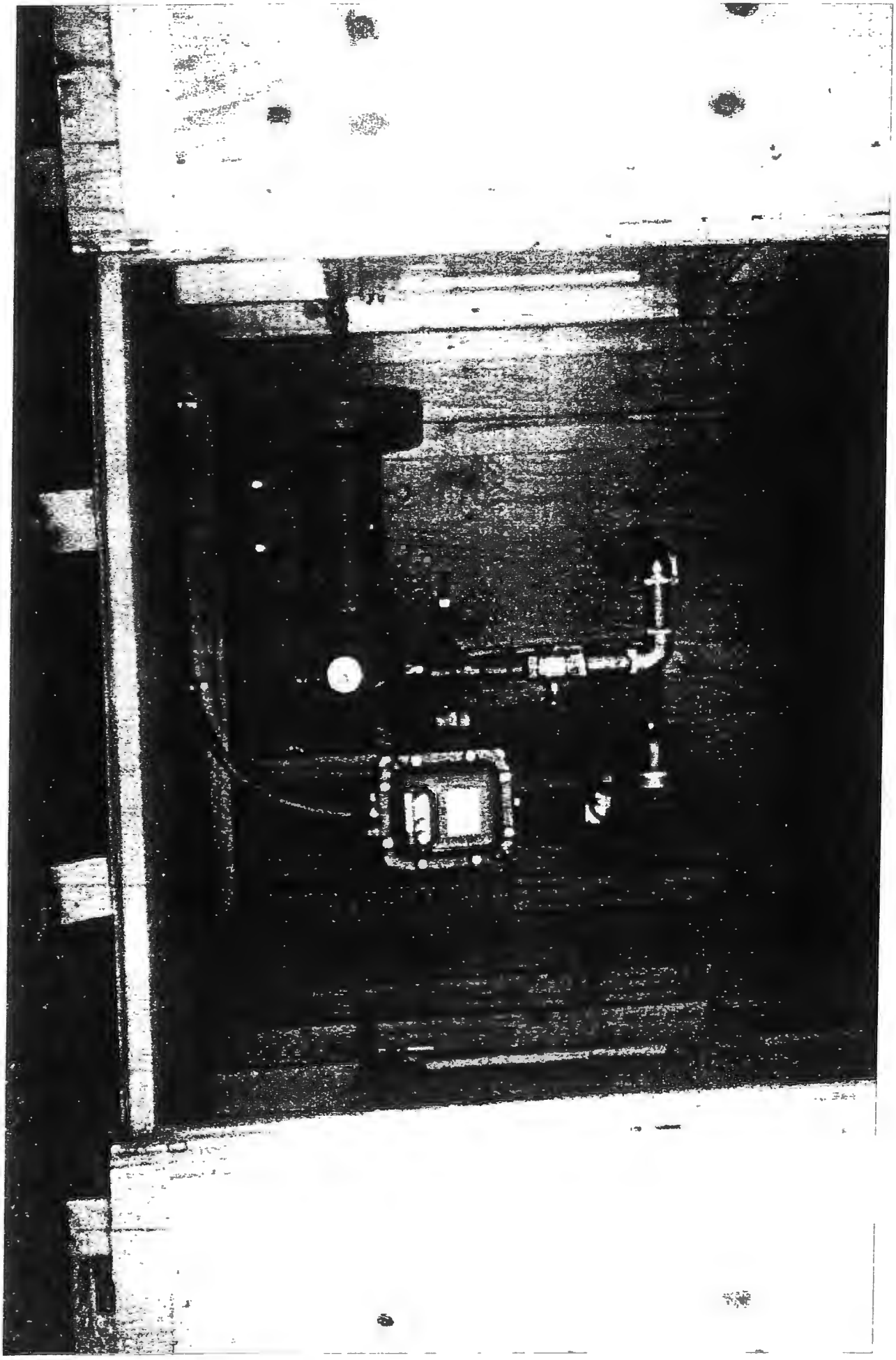
3.5_2 lb O_2/lb C_6H_{14}


VENTING ENHANCED BIODEGRADATION


Conceptual Layout of *In Situ* Bioventing
Surface Monitoring to Assure No Air Emission
Cutoff Well to Prevent Migration to Basement (If Necessary)
Low Rate Air Injection
Monitoring of Soil Gas to Assure Vapor Biodegradation
Biodegradation of Hydrocarbon Vapors

Bioventing

- *Advantages :*
  - *No Excavation Required*
  - *Studies have Shown Effectiveness*
  - *Simple, Low Capital Costs*
  - *Usually the Least Costly Option*
- *Disadvantages:*
  - *Problematic in Low Permeable Soils*
  - *Requires Longer Clean-up Times*
  - *Resistant Compounds are Not Degraded*



Beale AFB, California

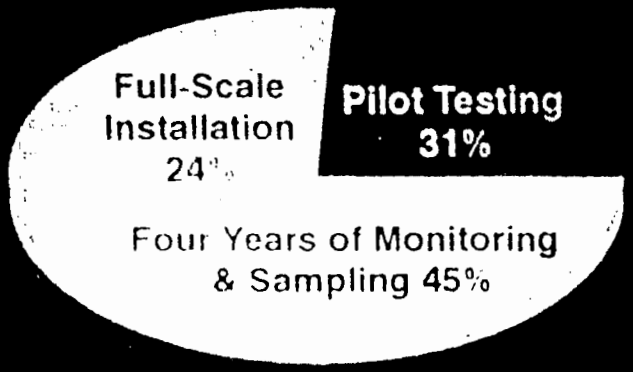
Site 22-A20

Heating Oil

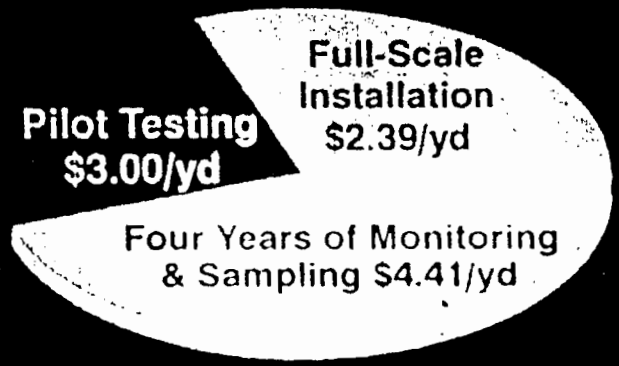
Biodegradation Rate= 750-900 mg/kg/yr

Cost Summary for Four-Year Bioventing Demonstration

Total Cost to Date - $147,000



Total Cost Per Cubic Yard - $9.80*



** Based on Estimated 15,000 Cubic Yards*

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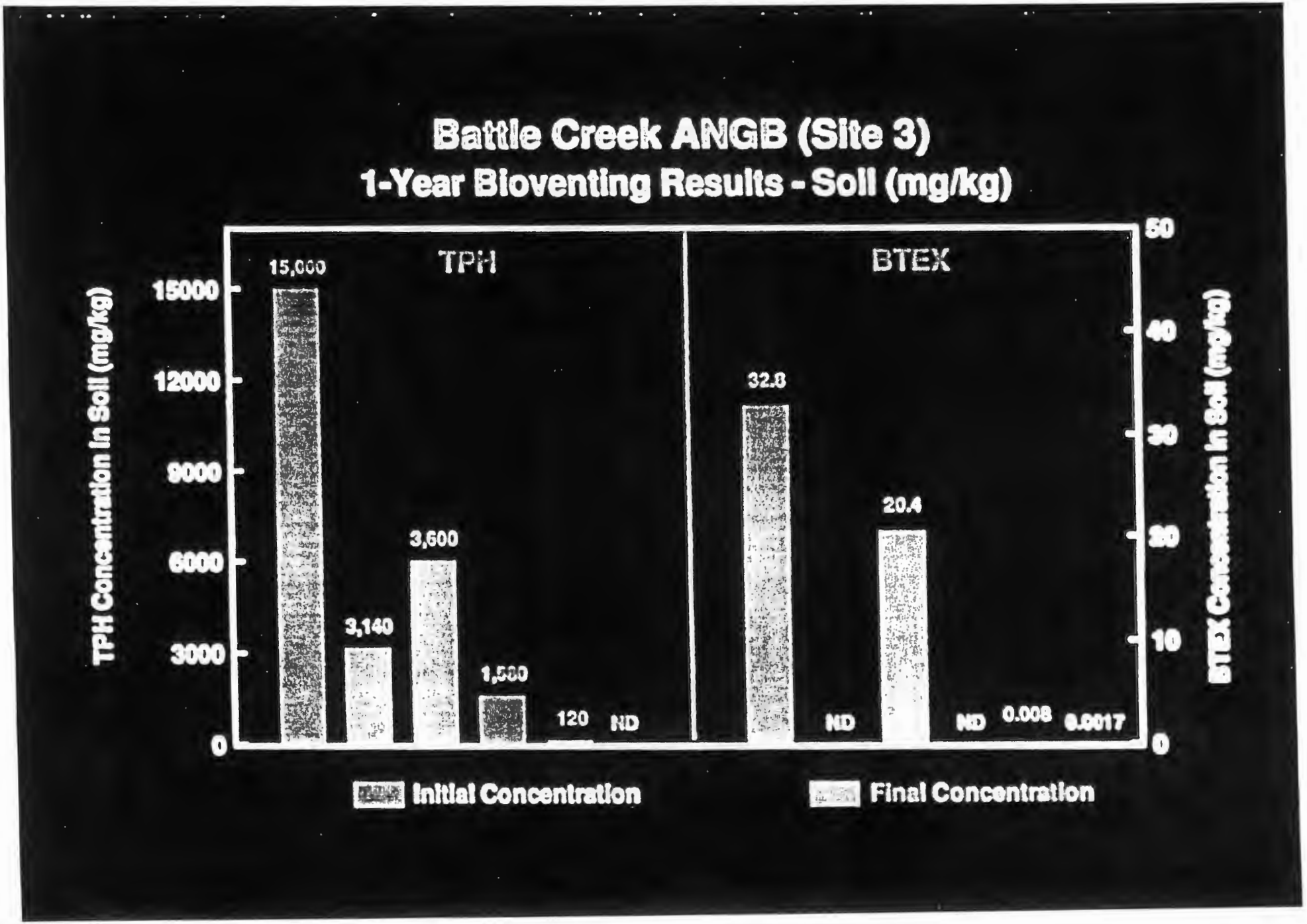
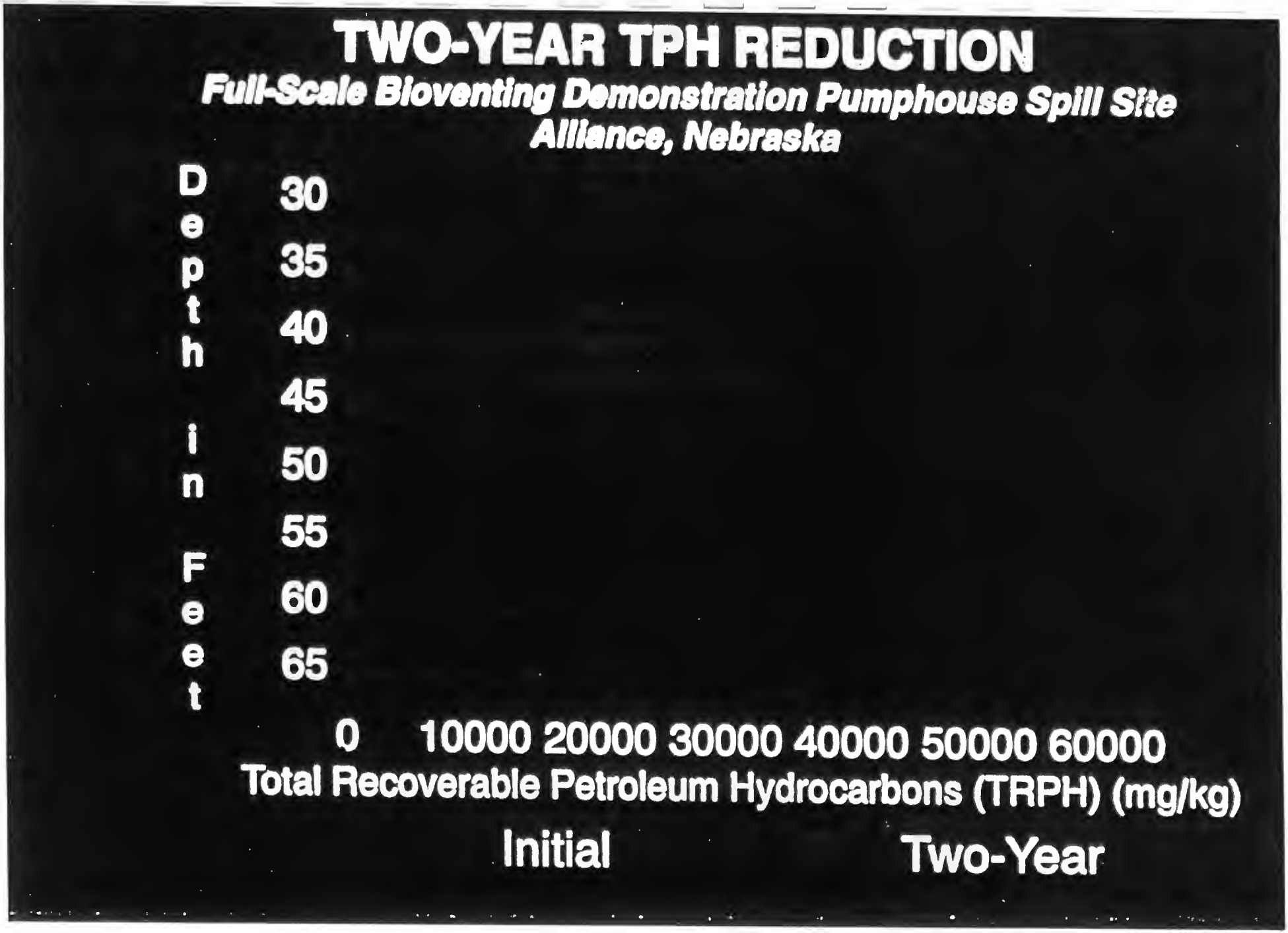
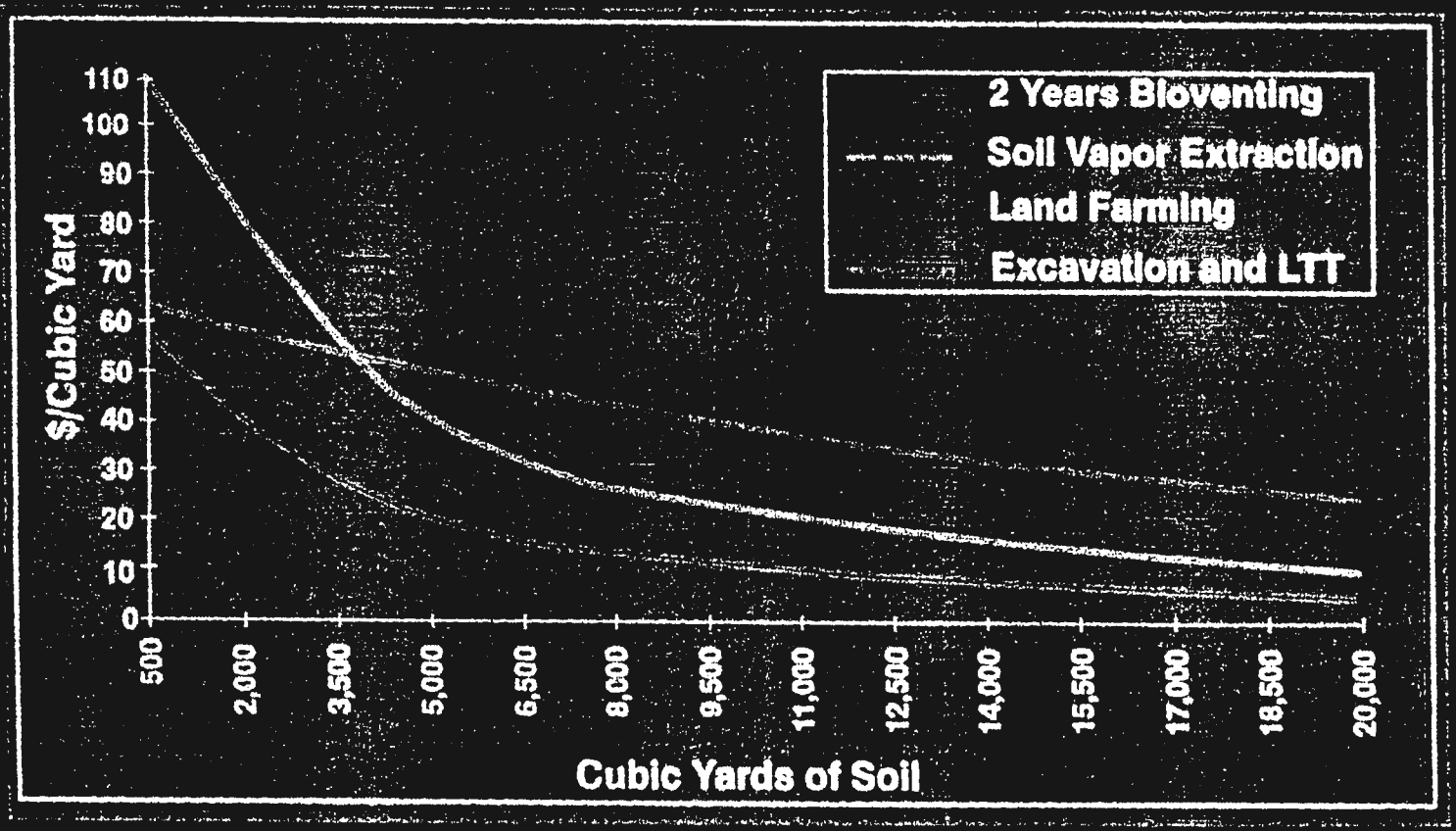

Battle Creek ANGB (Site 3)
1-Year Bioventing Results - Soil (mg/kg)
TPH
BTEX
TPH Concentration In Soil (mg/kg)
BTEX Concentration In Soil (mg/kg)
15000
12000
9000
6000
3000
0
50
40
30
20
10
0
15,000
3,140
3,600
1,500
120
ND
32.8
ND
20.4
ND
0.008
0.0017
Initial Concentration
Final Concentration

TWO-YEAR TPH REDUCTION

Full-Scale Bioventing Demonstration Pumphouse Spill Site
Alliance, Nebraska



Comparison of Unit Costs



PARSONS ENGINEERING SCIENCE, INC.

Restoration Advisory Board
Meeting Agenda

August 19, 1997

7:00	**Welcome** LTC Donald C. Olson Commander, Seneca Army Depot Activity
7:05	**Acceptance of Minutes** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
7:10	**Fiscal Year 1998 Environmental Program** Mr. Thomas R. Enroth Project Engineer, U.S. Army Corps of Engineers, New York District
7:40	**Break**
7:50	**Open Burning Grounds Proposed Remedial Action Plan** Mr. Randy W. Battaglia Project Engineer, U.S. Army Corps of Engineers, New York District
8:15	**RAB Charter Issues: Attendance, Resignation** Mr. Stephen M. Absolom/Dr. Dick Durst Army Co-chair/Community Co-chair
8:30	**Open Discussion**
9:00	**Adjourn**

MINUTES
RESTORATION ADVISORY BOARD
AUGUST 19, 1997 MEETING

1. Attendance:

Government RAB Members Present:

Stephen M. Absolom, BRAC Environmental Coordinator, SEDA/Army Co-Chair
Dan Geraghty, NYS Department of Health
Carla Struble, U.S. Environmental Protection Agency

Government RAB Members Not Present:

Marsden Chen, NYS Department of Environmental Conservation

Community RAB Members Present:

Dick Durst/Community Co-Chair, Anne Herman, Frank Ives, Pat Jones, Harold Kugelmass, Mary Ann Krupsak, Russell Miller, Ken Reimer, Richard Sisson, Henry Van Ness, David Wagner

Community RAB Members Not Present:

Brian Dombrowski, Richard Lewis, Lucinda Sangree, Carmen Serrett

Environmental Support Personnel Present:

Thomas Enroth, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Randy Battaglia, U.S. Army Corps of Engineers, NY District, SEDA Resident Office
Kevin Healy, U.S. Army Corps of Engineers, Huntsville Div
Joanne Ogden, SEDA Legal Rep/Public Affairs Officer
Andrew Schwartz, Parsons Engineering Science, Inc.
Laura Sposato, SEDA Secretary

Community Support (from sign-in sheet):

Artje Banmer, Cornell
Neil Chaffie, Ovid Gazette
Carol Marthaller, Community Member
Emilie Sisson, Community Member

2. Stephen Absolom, the Army Co-Chair, welcomed members and support staff to the August Restoration Advisory Board at the NCO Club and outlined the evening's agenda. Steve provided the opening remarks for the meeting and asked for introductions of all attending.

3. Minutes from May and July's RAB meetings were signed and entered into the record.

4. Thomas Enroth from Seneca's Resident Office, U.S. Army Corps of Engineers, gave a presentation on the FY98 Environmental Program. The presentation gave an overview of the 27 FY98 BRAC environmental projects planned and a brief summary of the restoration projects. The following questions were generated:

a. **Question:** What does BTEX stand for?
Answer: It is the acronym for Benzene, Toluene, Ethylbenzene, and Xylenes, the characteristics of gasoline.

b. **Question:** Who will support site access, security, and fieldwork for contractors working on weekends?
Answer: Seneca will continue to support these areas as long as there is an ammunition requirement and manpower. The security is driven by ammunition. When the supplies and ammo are gone, the contractor will have to do it.

c. **Question:** Why are we doing radiation surveys?
Answer: Tied to the BRAC effort for license termination. The policy is if there was some radioactive element, structures need to be surveyed for residuals. We still have depleted uranium ammunition stored here.

d. **Question:** Is there any radiation?
Answer: We still have to do a closeout survey even though the annual surveys do not show any release. It is mandated by Nuclear Regulatory Commission (NRC).

e. **Question:** What is UXO?
Answer: UXO is an acronym for unexploded ordnance.

f. **Question:** What is the Installation Archive Search.
Answer: A record review of the history of ammunition use at the installation will show areas where unexploded ordinance has the potential to exist.

g. **Question:** Has it been done yet?
Answer: No. It will be done installation-wide. It is a separate effort from previous reviews.

h. **Question:** Training requirements - i.e. HAZMAT, hazardous materials … shouldn't it be responsibility of contractor.

Answer: Training provided at Seneca is only for Seneca personnel. O'Brien and Gere, Inc., has been contracted to perform much of the training.

i. **Question:** What areas are included in asbestos abatement and lead-based abatement?

Answer: Asbestos in Bldgs 208, 209. Pipe insulation in these houses require removal. There is some lead-based paint in other housing units. They have to be tested. Before they can be transferred, may need to have abatement.

j. **Question:** Will they do remedial work on Fire Training Areas even though reuse in the future may be for a fire related function?

Answer: Reuse plan does not call for that as a future use.

k. **Question:** In reference to Ash Landfill, is there and to what extent is there ground water contamination?

Answer: The plume, some of which is off post, contains contaminants at levels below drinking water standards. The site is on the west side of the base, midway down. Hope to have something in place soon as a pilot study. Refer to map "ASH LF". It is located near Sampson State Park if you were driving up 96A. The remedial design will be prepared in FY98.

l. **Question:** On deactivation furnaces, what is PRAP?

Answer: It is the acronym for Proposed Remedial Action Plan for the clean up of a site.

m. **Question:** Is a deactivation furnace used for ordnance?

Answer: Yes, i.e., also known as the popping plant - explodes bullets and separates brass casings out for recycling.

n. **Question:** What is in IRFNA site?

Answer: It is a liquid propellant in the form of an acid with a corrosion inhibitor. We do not have the chemical composition yet. We will investigate this in the proposed FY 98 effort.

o. **Question:** What was done with waste from munitions washout facility?

Answer: A lack of information exists about this site and the corresponding operations. This is some of the problems that we face. We will be checking with other depots to find out what happened to water, etc., at their site.

p. **Question:** Every three months I receive correspondence in the mail about the water. Does this have anything to do with it?

Answer: Not at all. The correspondence has to do with surface water treatment rules. We are in violation because our water doesn't go through a filtering process. The current status on the water project, to connect to the Waterloo treatment plant, is ahead of schedule. We expect to be tied in by early September. Then you won't receive those letters anymore because we will be in compliance with regulations.

q. **Question:** Where did the debris of the old construction debris landfill come from - community or military?

Answer: Military

r. **Question:** Are the raw metals that are stockpiled going to be a problem?

Answer: We are reviewing this issue with the regulators. We don't believe it to be a problem.

s. **Question:** Will they be removing these below the ground level?

Answer: Yes

t. **Question:** Are the sludge piles more hazardous than fertilizer?

Answer: No, it is municipal sewage with no industrial waste included.

u. **Question:** Does it very greatly from other municipal sewage plants?

Answer: Not really. Some tests show larger amounts of some metals than other plants do. We didn't find anything unusual.

v. **Question:** How many piles are there and where are they located?

Answer: Six of them and they are located in the South Depot, identified as SEAD 5.

w. **Question:** Do the asbestos storage tank look like a regular tank from the outside?
Answer: Yes it does, an aboveground dry storage tank.

x. **Question:** Since FY 98 will be a busy year, who or how is it decided when we get the funding for which project?
Answer: Usually it is money driven. The schedule is part of the Federal Facilities Agreement. It depends on what has reuse potential, relative risk, i.e., worse first.

y. **Question:** Does this come out of the army budget?
Answer: Yes it competes with same money for army bases and the active army payroll.

z. **Question:** Why are they investigating the site at 119A?
Answer: Site 119A was sewage spill overflow. We don't expect to find anything. Investigation will do limited sampling on this. Only five houses on the hill could have impacted this site. In the mid 80's it was a new pump station. The pumps failed and it overflowed.

aa. **Question:** Conveyance is expected for institutional housing areas, airfield for FY 98. Are sites in the 97 budget, completed now or being scheduled in 98?
Answer: Institutional area has site identified with prefix number 123 and in FY98 will be investigated i.e., pile of dirt, buried drums, etc. We don't expect to find much.

bb. **Question:** Can we issue a FOSL report before cleanup?
Answer: FOSL is Finding of Suitability to Lease. We can, but we have to work through the issues.

cc. **Question:** What is being removed from the dirt mound near RTE 96 and where is it going?
Answer: Ferrochrome ore - a stockpile, and it's being shipped to North Carolina

dd. **Question:** Will you be looking at housing in Elliot Acres?
Answer: Yes, but asbestos abatement effort is required in building 208 & 209 before transfer.

ee. **Question:** What about the airfield?
Answer: At site 122 we will do some testing in FY98. Things of concern include 122E where deicing of plane may have occurred. We have no records on this. Air force used this airfield prior to Seneca. We will do some sampling to see if deicing occurred. Other areas that are being looked at: 122A -

skeet range for lead contamination, 122C - storage building for possible oil spills, 122B -small arms range. This may not require anything. We will do some testing for contamination. Site 122D had a fuel spill. The site was cleaned up but not closed out.

ff. **Question:** Wouldn't it be beneficial to attach the location numbers to the specific areas to be cleaned up in the next presentation?

Answer: Yes, the maps were an addition to this presentation. We will provide a key for the maps and keep everyone posted on the projects being funded.

5. Randy Battaglia from the U.S. Army Corps of Engineers, N.Y. District, gave a presentation on the Open Burning Grounds Proposed Remedial Action Plan. Since 1988, Seneca was the first facility to use a steel tray for open burning. He showed a movie of a crew setting up and performing an open burning ground operation. Once it is set up, they ignite it electronically from a remote location. The residual is vacuumed and disposed of as waste. Randy also showed some slides showing the demilling of 105mm artillery rounds. They are disassembled and the propellant vacuumed out. The leftover brass shell is collected, flashed and sent off as recyclable brass. Some questions generated from presentation:

a. **Question:** How often do you perform open burning operations?

Answer: Some years we did it more than others. It is based on what other work there is to do and availability of money.

b. **Question:** Was the ammunition stored here?

Answer: Yes.

c. **Question:** Where is the Burn Kettle on the map?

Answer: Locate Pad J on the west side of the open burning grounds, it was southwest of Pad J.

d. **Question:** Do you need a permit for this burning?

Answer: Yes, and it is renewed annually.

e. **Question:** Did we meet the pollution standard?

Answer: Back then we did. We are still in compliance with open burning rules.

f. **Question:** Has the money been requested for this project?

Answer: Yes.

g. **Question:** When is this being done?
Answer: Optimistically March. The plan will get approved in September, budget approved the end of September-October. Then we develop a remedial action design. We will develop a design for the clean up and then contract the effort.

h. **Question:** When will you begin working on the plan?
Answer: Not until next spring - 2-3 months for UXO survey, 12-18 months to complete the entire effort.

i. **Question:** Do you use open contracts with contractors?
Answer: Yes, we use some that are preplaced.

j. **Question:** Are they renewed?
Answer: Yes, some have option years but all are eventually renewed.

k. **Question:** Are there any nuclear weapons stored at Seneca?
Answer: We can neither confirm or deny the presence of such.

7. During open discussion Steve Absolom brought up the question raised earlier in meeting regarding an article in the newspaper on reuse of Seneca's North End by Youth Services. Pat Jones of the LRA stated that they do have a proposal on the table and it is being considered by the LRA.

8. Steve also addressed the attendance at meetings. As a result of a survey conducted, one member resigned, and one is considering whether or not to continue. He raised the question of whether we want to go out and solicit the community for additional members, i.e., advertise in the newspaper. RAB agreed we should proceed with solicitation of new members. We currently have 16 members including the LRA. If someone can't make meeting, can still receive handout information. It was suggested that after a member misses two meetings unexcused, send a reminder. If they miss a third, then they would be removed. Also agreed that the charter be revised to reflect this. It will be reviewed at the next meeting.

9. Steve also solicited topics for future meetings. Suggestions were reuse and impact of clean up effort, more information on solidification process, status of clean up funding and a priorities listing for clean up projects.

10. The next Restoration Advisory Board, or a public meeting on the cleanup plan for the Open Burning (OB) Grounds, to be held at Seneca County Office Building on September 16, 1997 at 7:00 p.m. If there isn't a public meeting, then the RAB will be held at the SEDA NCO Club. More about this will be known in the next couple of weeks. Notification on the next meeting will be announced.

11. The meeting was adjourned at 9:45 p.m.

Respectfully submitted,

Laura J. Sposato

LAURA J. SPOSATO
Secretary

APPROVED AS SUBMITTED:

Stephen M. Absolom

STEPHEN M. ABSOLOM
U.S. Army Co-Chair

RICHARD A. DURST
Community Co-Chair

FY 98 Environmental Program RAB Presentation

Presented by Thomas Enroth
Project Engineer
U. S Army Corps of Engineers

TONIGHT'S PRESENTATION

- FY 98 Environmental Project List
- Restoration Projects
- Summary

FY 98 Environmental Program, Seneca Army Depot

FY 98 Project List

Restoration Program

- Open Burning Grounds
- Ash Landfill
- Fire Training Areas (2)
- Deactivation Furnaces (2)
- Munitions Washout Facility
- IRFNA Disposal Pits

FY 98 Project List (cont.)

- Old Construction Debris Landfill
- Sewage Sludge Piles

- Metals Removal Sites:
  - Abandon Powder Burning Pit
  - Tank Farm
  - Asbestos Storage
  - Dump Site East of STP #4

FY98 Project List (cont.)

- BTEX/VOC's Removal Sites:
  Boiler Plant Blowdown Pits Located at Buildings 121, 319, 718, and 2079
- Environmental Baseline Study Site Investigations (29 sites)
- Installation Groundwater Monitoring Program

FY 98 Project List (cont.)

- Update Generic Workplan for RI/FS
- BRAC Cleanup Plan
- BEC Salary
- BEC/BRAC Support
- Restoration Advisory Board Support
- Site Access (security and fieldwork)

FY 98 Project List (cont.)

Compliance Projects

- Hazardous Waste Disposal
- Environmental Training Requirements
- Cultural Resource Management
- Radiation Surveys
- Installation Archive Search, UXO

FY 98 Project List (cont.)

Compliance Projects (cont.)

- Asbestos Abatement
- Lead Based Paint Abatement
- Environmental Testing Contract
- PCP Treated Wood Disposal

Remedial Action

- Open Burning Grounds

  Proposed Remedial Action Plan - FY 97 (Plan)
  Remedial Design- FY97/FY98 (Project Design)
  Remedial Action - FY98 (Cleanup)

Remedial Design

- Ash Landfill
- Deactivation Furnaces (active and abandoned furnaces)
- Fire Training Areas (fire training pit and fire demonstration pad)

Ash Landfill

- Interim Removal Action completed in June, 1995 (soil treatment)
- Groundwater contamination plume still requires remediation
- PRAP currently under review/revision
- Following public review/comment period, a Record of Decision (ROD) will be prepared for final selected remedy

Ash Landfill (cont.)

- The public will be notified announcing the availability of the ROD
- The ROD will been signed by the Army, the EPA, and the NYSDEC for the selected remedy
- The Remedial Design will then be prepared for the site in FY98

Deactivation Furnaces

- Two sites: abandoned and upgraded deactivation furnaces
- PRAP and ROD is scheduled for submission in FY98
- After public review and comment period, ROD will be prepared
- The Remedial Design will then be prepared for the site

Fire Training Areas

- Two locations: fire training pit and the fire demonstration pad
- PRAP and ROD will be submitted in FY98
- After public review and comment period, ROD will be prepared
- The Remedial Design will then be prepared for the site

Remedial Investigation/Feasibility Study

- Munitions Washout Facility
- Inhibited Red Fuming Nitric Acid Neutralization Pits (IRFNA Site)
- Old Construction Debris Landfill (to include two garbage disposal sites)

Munitions Washout Facility

- Munitions Washout Facility was part of the Ammunition Renovation Workshop
- Workshop area is about 30 acres in size
- Washout Facility active between 1948 to 1963
- Purpose was dismantling of munitions and removing explosives by steam cleaning or hot water flushing

Munitions Washout Facility (cont.)

- A lack of information exists about this site and the corresponding operations
- Investigation plan includes: building investigation, soil sampling (surface and subsurface), surface water and sediment sampling, groundwater sampling, ecological investigation, and risk assessment

Munitions Washout Facility (cont.)

- The Expanded Site Investigation (ESI) revealed :

  Metals-antimony, chrome, copper, zinc

  Semi-volatile organic compounds

  Pesticides

  PCB's

IRFNA Disposal Pits

IRFNA- Inhibited Red Fuming Nitric Acid

Background: IRFNA is an oxidizer used in missile liquid propellant systems. During the early 1960's, unserviceable quantities were disposed. This involved the use of a shallow trench 30 'l X 8'w X 4'd partially filled with limestone and covered with water. IRFNA was injected into the pit (trench) under the water. This allowed the IRFNA to mix with the limestone in the pit and be neutralized. There are a total of 6 pits.

IRFNA Disposal Pits (cont.)

- Investigation plan includes: soil sampling (surface soils, test pits, soil borings), surface water and sediment sampling, groundwater and ecological investigations

IRFNA Disposal Pits (cont.)

The ESI revealed :

- metals: aluminum, arsenic, chromium, copper, iron , and nickel
- VOC's and SVOC's
- nitrate/nitrite nitrogen in groundwater

Old Construction Debris Landfill and Garbage Disposal

Background: The Old Construction Debris Landfill is about 4 acres in size and was used from 1946 to 1949. Site is covered with grasses and weeds, and looks higher than surrounding areas. The operating practices used are unknown.

Old Construction Debris Landfill and Garbage Disposal (cont.)

Background: The Garbage Disposal Areas (2) were in use from 1974 to 1979 when the solid waste incinerator was not in operation. At both sites, primarily household garbage was disposed of, but other industrial items were also landfilled.

Old Construction Debris Landfill and Garbage Disposal (cont.)

- Investigation plan includes: geophysical investigations, soil sampling (surface soils, soil gas, soil borings), surface water and sediment sampling, groundwater and ecological investigations

FY 98 Environmental Program, Seneca Army Depot

Old Construction Debris Landfill and Garbage Disposal (cont.)

The ESI revealed :

metals: copper, lead, and zinc
VOC's
SVOC's

Removal Actions

- Sewage Sludge Piles
- Metals Removal Sites:
  - Abandon Powder Burning Pit
  - Tank Farm
  - Asbestos Storage
  - Dump Site East of STP #4

Removal Actions

- BTEX/VOC's Removal Sites:
  Boiler Plant Blowdown Pit Bld. 2079
  Boiler Plant Blowdown Pit Bld. 121
  Boiler Plant Blowdown Pit Bld. 319
  Boiler Plant Blowdown Pit Bld. 718

BTEX/VOC's Removal (cont.)

- Background- From 1942 to 1979, liquids from the boiler blowdown was discharged through a pipe onto the ground or into a ditch. Later, the pipe was connected to the sanitary sewer
- The boiler blowdown contained tannins, caustic soda, and sodium phosphate (boiler cleaning chemicals)
- Cleanup alternatives are being evaluated

Sewage Sludge Piles

Background: During the 1980's, sewage sludge from the drying beds of the two on-site sewage treatment plants were stockpiled. One sludge pile, about 560 tons, was removed in 1992 and sent to a secure landfill. Currently, six more sludge piles are on site.

Sewage Sludge Piles (cont.)

- Piles were tested, results found SVOC's and also metals (antimony, copper, magnesium, mercury, silver, and zinc
- Disposal - the total volume and weight of the piles will be calculated. Various disposal options can then be evaluated.

Metals Removal Sites

- Metals Removal Sites:
  - Abandon Powder Burning Pit
  - Tank Farm
  - Asbestos Storage
  - Dump Site East of STP #4

Metals Removal Sites (cont.)

- Abandoned Powder Burning Pit is a U shaped shale lined berm 325' X 150' in size used during 1940's and 1950's. Probably used to burn black powder and some solid propellants.
- Expanded Site Investigations (ESI) show the site has been impacted by heavy metals.

Metals Removal Sites (cont.)

- Tank Farm and Asbestos Storage Site - a site where 160 above ground storage tanks were located, only 4 tanks remain (one is the Asbestos Storage Site). Tanks were used to store dry ore and minerals.
- Expanded Site Investigations (ESI) revealed metals, suspected to have been spilled during filling and removal operations.

Metals Removal Sites (cont.)

- Dump Site East of STP #4 is an area where waste piles and berms are located in a heavily vegetated area. The contents of the piles and the time period when placed is unknown.
- Expanded Site Investigations (ESI) revealed heavy metals.

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Metals Removal Sites (cont.)

Currently, the cost effective cleanup action for these sites is a removal action. This would involve the excavation, hauling, and disposal at a permitted landfill. This would also eliminate the need to do long term monitoring at the sites.

Summary

- FY 98 will be a very busy year
- FY 98 budget submission is for $16.8 Million
- Site cleanup work begins
- Continue on-going studies
- New sites will be investigated
- Examine better, faster, and cheaper ways of cleaning up the Depot